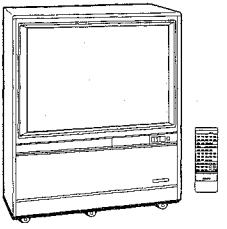
KPR-53EX30
RM-Y109

SERVICE MANUAL

US Model
Chassis No. SCC-D65F-A



MODELS OF THE SAME SERIES	
KPR-53EX30	
KPR-46EX30	
KPR-46EX32	

SPECIFICATIONS

Structure	Screen and projector, rear projection type
Projection system	3 picture tubes, 3 lenses, horizontal in-line system
Picture tube	5.5 inch high-brightness monochrome tubes, with optical coupling and cooling system
Projection lenses	High performance, large-diameter hybrid lens F 1.0
Screen material	Acrylic plastic lenticular, Polycarbonate plastic Fresnel
Resolution	700 lines
Optimal viewing area	Within approx. 80 degrees from center

Projected picture size (measured diagonally)

	Picture size (in inches)
KPR-53EX30	53

Screen brightness

	foot-Lamberts
KPR-53EX30	370

MICROFILM

COLOR REAR VIDEO PROJECTOR

SONY®

Television system	American TV standards
Channel coverage	VHF: 2 – 13 UHF: 14 – 69 CATV: 1 – 125
Antenna	75-ohm external antenna terminal for VHF/UHF/CATV
Inputs	VIDEO 1, 2, 3 INPUT (phono jacks) Video: 1Vp-p, 75 ohms unbalanced, sync negative Audio: 460 mVrms (100% modulation, 47 kilohms) VIDEO 1 S VIDEO INPUT (4-pin mini DIN) Y: 1 Vp-p, 75 ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75 ohms 75-ohm external antenna terminal for VHF/UHF/CATV AUX 75-ohm auxiliary antenna terminal
Outputs	MONITOR OUTPUT (phono jacks) Video: 1 Vp-p, 75 ohms unbalanced, sync negative Audio: 460 mVrms (100% modulation, 1 kilohm) AUDIO OUTPUT (phono jacks) 460 mVrms (variable) (100% modulation, 1 kilohm) TO CONVERTER terminal
Speaker	Two-way coaxial speaker system Woofer 20 cm (8 inches) dia. Tweeter 7.6 cm (3 inches) dia.
Power requirements	120 V AC, 60 Hz

Power consumption

	max.	avg.	standby mode
KPR-53EX30	290 W	175 W	3 W

	Dimensions (w/h/d)	Weight
KPR-53EX30	1166 x 1370 x 882* mm (46 x 54 x 34¾* in.)	135 kg (297 lbs 10 oz)

* 670 mm (26⅜ in.) when the mirror cover is installed inside the cabinet

Supplied accessories	Remote Commander RM-Y109 (1) with 2 size AA (R6) batteries Antenna connector (1)
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-810/820S YC-15V/30V

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

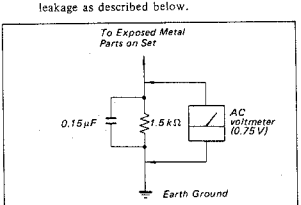


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

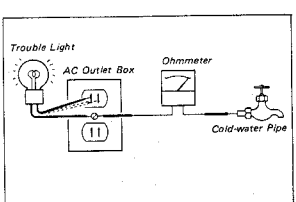


Fig. B. Checking for earth ground.

TABLE OF CONTENTS

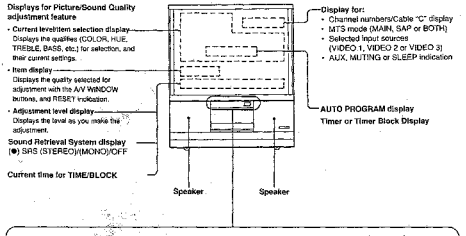
Section	Title	Page
1. GENERAL		
1-1.	Location of Controls	5
1-2.	Connecting TV Antenna/Cable	6
1-3.	Registration Adjustment	7
1-4.	Presetting TV Channels	8
1-5.	Viewing TV Programs	9
1-6.	Adjusting the Picture and Sound Level	10
1-7.	Enjoying Convenient Features	11
1-8.	Timer/Block	12
1-9.	Application with Optional Equipment	14
1-10.	VCR Connection	14
1-11.	Audio System Connection	16
1-12.	Notice on Audience Area	16
2. DISASSEMBLY		
2-1.	Control Panel Removal	17
2-2.	Screen Removal	17
2-3.	Mirror Block Assy Removal	18
2-4.	D Board and High-Voltage Resistor Assy Removal	18
2-5.	Switching Regulator, Connection Panel and U Board Removal	19
2-6.	P and A Boards Removal	19
2-7.	Picture Tube Removal	20
2-8.	Chassis Assy Removal	20
2-9.	High-Voltage Cable Installation and Removal	21
3. SET-UP ADJUSTMENTS		
3-1.	Focus Lens Adjustments	22
3-2.	Adjustments of 4 Poles Magnet	22
3-3.	Adjustments of 2 Poles Magnet	23
3-4.	Adjustment (Blue) of Defocus	23
3-5.	Green Picture Adjustments	24
3-6.	Green and Red Vertical Registration	26
3-7.	Green and Red Horizontal Registration	27
3-8.	Green and Blue Vertical Registration	29
3-9.	Green and Blue Horizontal Registration	30
3-10.	White Balance, G2 Adjustment	31
3-11.	White Balance Adjustment	31
4. SAFETY RELATED ADJUSTMENTS		
4-1.	Safety Related Adjustments	32
4-2.	HV-Hold Down and HV-Regulator Adjustment	33
5. CIRCUIT ADJUSTMENTS		
5-1.	A Board Adjustments	36
5-2.	G Board Adjustments	37
6. DIAGRAMS		
6-1.	Block Diagram	39
6-2.	Circuit Boards Location	44
6-3.	Schematic Diagram and Printed Wiring Boards	45
6-4.	Semiconductors	82
7. EXPLODED VIEWS		
7-1.	Control Panel	83
7-2.	Mirror Block	84
7-3.	Picture Tube	85
7-4.	Chassis	86
8. ELECTRICAL PARTS LIST		87

SECTION 1
GENERAL

1-1. LOCATION OF CONTROLS

For details, refer to the pages indicated by the numbered black circles ●.

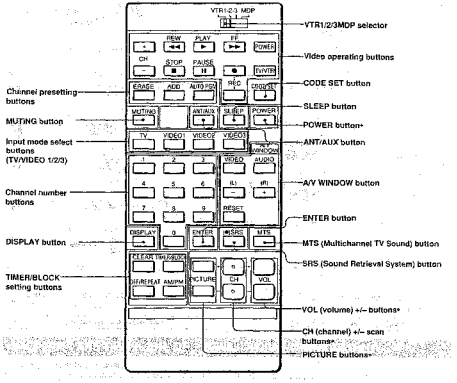
Front


Displays for Picture/Sound Quality adjustment feature
• Current level/item selection display
Displays the qualities (COLOR, HUE, TREBLE, BASS, etc.) for selection, and their current settings.
• Item display
Displays the quality selected for adjustment with the A/V WINDOW buttons, and RESET indication.
• Adjustment level display
Displays the level as you make the adjustment.
Sound Retrieval System display
(●) SRS (STEREO)/(MONO)/OFF
Current time for TIME/BLOCK
Display for:
• Channel numbers/Cable "C" display
• MTS mode (MAIN, SAP or BOTH)
• Selected input sources (VIDEO 1, VIDEO 2 or VIDEO 3)
• AUX, MUTING or SLEEP indication
AUTO PROGRAM display
Timer or Timer Block Display
Speaker
Speaker
CABLE selector
AUTO STEREO selector
SPEAKER selector
VIDEO 2 IN jacks
Centering controls
NORM/TEST selector
STEREO lamp
Remote control detector
POWER button
TIMER lamp
CHANNEL +/– scan buttons
VOLUME +/– BUTTONS
TV/VIDEO button

Remote Commander RM-Y109

Note
Most of the functions require the Remote Commander.
Please do not lose it.

* The same function buttons are also located on the projector.

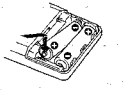


Battery Installation

Remote Commander RM-Y109

1 Push to open the lid (rear of the commander).

2 Install two size AA (R6) batteries in correct polarity.



3 Replace the lid.

Notes

- With normal operation, batteries will last up to half a year. If the commander does not operate properly, the batteries might be exhausted. Replace all with new ones.
- To avoid damage from possible battery leakage, remove the batteries for extended unused periods.
- Be sure that there are no obstructions between the remote commander and the projection TV.
- Operable range is limited to a 23.5 ft. (7 meter) distance and a 30° angle in each direction.
- If a remote commander that is not recommended is used to operate this projection TV, or if the supplied remote commander is used to operate other equipment, the equipment may not operate properly.

WARNING
Batteries may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

1-2. CONNECTING TV ANTENNA/CABLE

You can use either an indoor or outdoor antenna with your projection TV. We recommend using an outdoor antenna for better picture quality.

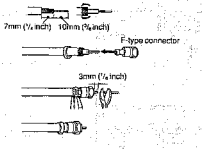
You can receive cable TV by connecting a cable supplied by your local cable company.

To Connect VHF, UHF or VHF/UHF Combination Antenna*, or CATV Cable

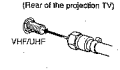
75-ohm coaxial cable (round)

1 Check your antenna cable type and prepare the end of the cable using the F-type connector.

Attach an F-type connector (not supplied).



2 Plug the connector into the VHF/UHF terminal at the rear of the projection TV.

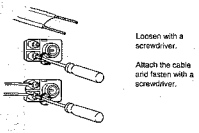


* Most combination antennas are equipped with a signal splitter. Remove the splitter and attach the appropriate connector.

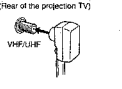
300-ohm twin-lead cable (flat)

1 Check your antenna cable type and prepare the end of the cable using the supplied antenna connector.

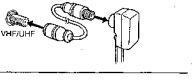
Attach the supplied antenna connector.



2 Plug the connector into the VHF/UHF terminal at the rear of the projection TV.



For better picture quality, connect optional antenna cable so that the 300-ohm twin-lead cable can be separated a distance from the projection TV.



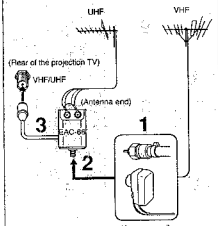
To connect both VHF and UHF antennas

Use the supplied EAC-66 U/V mixer.

1 Prepare the VHF antenna end using the appropriate connector.

2 Connect the cables to the mixer.

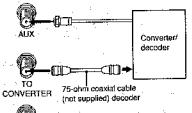
3 Attach the mixer to the VHF/UHF terminal.



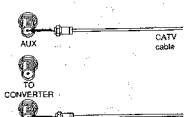
When the U/V mixer is used
Snow and ellips (interference) may appear in images of cable TV channels over 37 (W+1).

To connect a cable with a special converter/ decoder* for pay cable TV systems

Pay cable TV systems use scrambled or encoded signals and require a special converter (decoder) in addition to the normal cable connection.



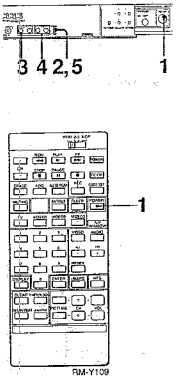
To connect both VHF/UHF antenna and CATV cables



Note
Do not connect anything to the TO CONVERTER terminal in this case.

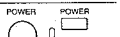
* The special converter/decoder will be supplied by the cable company.

1-3. REGISTRATION ADJUSTMENT

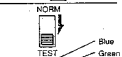


Mixture of Primary Colors

1 Press POWER on the projection TV or commander to turn on the projection TV.



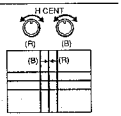
2 Set the NORM/TEST selector on the front panel to TEST.
A test pattern of colored lines will appear.



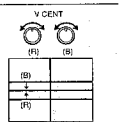
The position of the colored lines will depend on where your projection TV's registration happens to be set.

3 Adjust the H CENT (R) and (B) controls so that the red and blue vertical lines converge with the center green line.
Turn the knobs clockwise to move right, and counterclockwise to move left.

(R) = Red (B) = Blue



4 Adjust the V CENT (R) and (B) controls so that the red and blue horizontal lines converge with the center green line.
Turn the knobs clockwise to move up, and counterclockwise to move down.

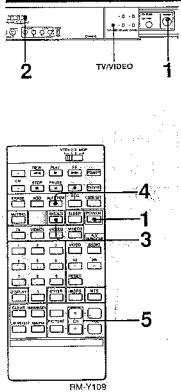


Repeat steps 3 and 4 to adjust the lines until the cross appears white.
(Step back from the projection TV to see the effect.)

5 After completing the adjustment, set the NORM/TEST selector to NORM.

1-4. PRESETTING TV CHANNELS

To Preset All Receivable Channels Automatically



RM-Y109

1 Press power on the projection TV or commander to turn on the projection TV.

POWER POWER

2 Set CABLE selector (projection TV) to the appropriate position.

ON — To preset cable TV channels

OFF — To preset VHF or UHF channels

CABLE

3 Press ANT/AUX button (commander) to select the channel mode you want to preset.

VHF, UHF or regular cable TV — 3 — ANT/AUX — Pay cable TV — AUX 3

If "VIDEO 1," "VIDEO 2" or "VIDEO 3" is displayed on the screen, press TV on the commander or TV/VIDEO on the projection TV so that a channel number appears.

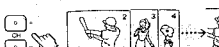
4 Press AUTO PGM button (commander).

AUTO PGM

"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the projection TV's memory.

When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

5 Press CH +/– to check or view preset channels.



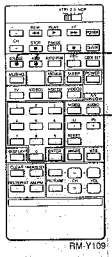
Channels that can be received on this projection TV:

VHF: 2–13
UHF: 14–69
Cable: 1–125

To add channels that could not be preset automatically because their signal strength was too weak, or to erase unnecessary channels, follow the steps in "To Preset Only Desired Channels or to Erase Unnecessary Channels" on the next page.

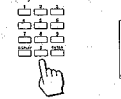
To Preset Only Desired Channels or to Erase Unnecessary Channels

All necessary controls are on the commander.



RM-Y109

1 Press the channel number button(s) and then ENTER to select the channel you want to add or erase.



2 **To add channels**
Press ADD.

A "+" appears before the channel number for a moment. This channel has now been added to the channel scan memory.

To erase channels
Press ERASE.

A "–" appears before the channel number for a moment. This channel has now been erased from the channel scan memory.

Repeat steps 1 and 2 to add or erase other channels.

Tip: Erase non-receiving channels so that when you scan channels, only receiving channels will be displayed.

CAUTION

When a VHF or UHF channel is erased
The cable TV channel with the same number is also erased, and vice versa.

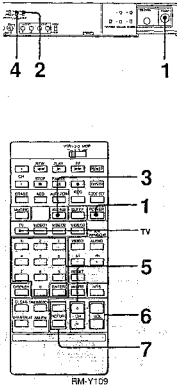
Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on the TV	1	5	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corresponding CATV channel	A-8	A-7	A-6	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	31	32	33	34	35	36	37	38	39	.....	93	94	95	96	97	98	99	100	101	102	.....	122	123	124	125
	R	S	T	U	V	W	W+1	W+2	W+3	.....	W+57	W+58	A-5	A-4	A-3	A-2	A-1	W+59	W+60	W+61	.....	W+82	W+83	W+84	

Check with your local cable TV company for more complete information on the available channels.

*This designation of cable TV channels conforms to the EIA/NCTA recommendation.

1-5. VIEWING TV PROGRAMS



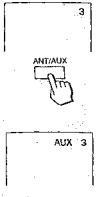
1 Press POWER on the projection TV or commander to turn on the projection TV.

2 Set CABLE selector (projection TV) to the appropriate position.

To watch cable TV channels

To watch VHF or UHF channels

3 Press ANT/AUX (commander) to select the channel mode you want to watch.



To watch VHF, UHF or regular cable TV channels

To watch pay cable TV channels

If "VIDEO 1," "VIDEO 2" or "VIDEO 3" is displayed on the screen, press TV on the commander or TV/VIDEO on the projection TV so that a channel number appears.

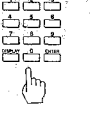
To turn off the projection TV
Press POWER again.

4 Set AUTO STEREO selector (projection TV) to ON.

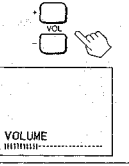
5 Select a channel in one of the following ways (controls on commander):

To scan the preset channels in numerical sequence
Press CH +/–.

To select a channel directly
Press the channel number button(s) and then ENTER.
For example, to select channel 10, press 1, 0 and ENTER.

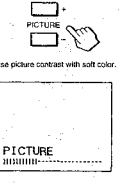


6 Press VOL + or – (commander) to adjust the volume.



7 Press PICTURE + or – (commander) to adjust the picture.

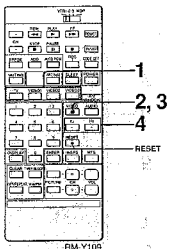
To increase picture contrast with vivid color.



To decrease picture contrast with soft color.

1-6. ADJUSTING THE PICTURE AND SOUND LEVEL

You can set different picture and sound quality levels for each input mode by changing the input mode (TV/VIDEO 1/2/3) before setting. These settings will be retained even when you turn the projection TV off.

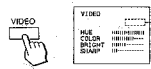


RM-Y109

Adjusting the Picture

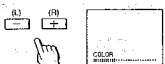
1 Select the input mode you want to adjust with the TV/VIDEO 1/2/3 buttons.

2 Press VIDEO.



3 Press VIDEO repeatedly until the quality you want to adjust blinks.

4 Press (R) or (L) to make the adjustment.



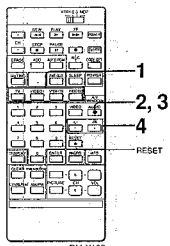
Picture quality	Press −(L) button	Press +(R) button
HUE	Skin tones become purplish	Skin tones become greenish.
COLOR	For less color intensity	For more color intensity
BRIGHT	For less brightness	For more brightness
SHARP	For less sharpness	For more sharpness

The display will disappear automatically after a few seconds.

To restore the factory (mid-level) settings

Press RESET.

The display will disappear after a few seconds.

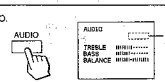


RM-Y109

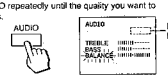
Adjusting the Sound

1 Select the input mode you want to adjust with the TV/VIDEO 1/2/3 buttons.

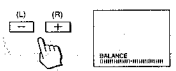
2 Press AUDIO.



3 Press AUDIO repeatedly until the quality you want to adjust blinks.



4 Press (R) or (L) to make the adjustment.

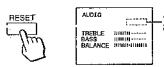


Sound quality	Press −(L) button	Press +(R) button
TREBLE	To decrease treble response	To increase treble response
BASS	To decrease bass response	To increase bass response
BALANCE	To emphasize the left speaker's volume	To emphasize the right speaker's volume

The display will disappear automatically after a few seconds.

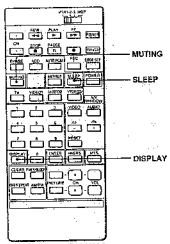
To restore the factory (mid-level) settings

Press RESET.



The display will disappear after a few seconds.

1-7. ENJOYING CONVENIENT FEATURES



RM-Y109

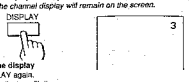
Muting the sound – MUTING

Press MUTING.
The display "MUTING" will appear on the screen.

To restore the sound
Press MUTING again, or press VOL +.

Keeping the channel displayed – DISPLAY

Press DISPLAY.
All the current displays will appear for a few seconds, then disappear. The channel display will remain on the screen.

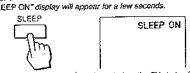


To cancel the display
Press DISPLAY again.
The channel display will disappear.

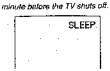
Using the sleep timer – SLEEP

Turns the TV off automatically about 1 hour after setting.

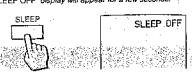
Press SLEEP.
A green "SLEEP ON" display will appear for a few seconds.



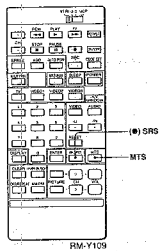
A red "SLEEP" display will appear 1 minute before the TV shuts off.



To cancel
Press SLEEP again.
A green "SLEEP OFF" display will appear for a few seconds.



The sleep timer setting is also cancelled when you turn the TV off.



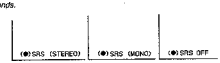
RM-Y109

For more natural sound reproduction – (●) SRS

To reproduce the dynamics of a live performance – Sound Retrieval System.

Press SRS.

Each time you press SRS, the SRS (STEREO), SRS (MONO) and SRS OFF modes are selected in sequence.
The display (in green) for each mode will appear on the screen for a few seconds.



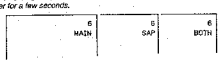
In SRS (STEREO) mode, stereo sound is enhanced.

In SRS (MONO) mode, the natural sound of a monaural source is enhanced.

To cancel SRS
Select SRS OFF.

Receiving a Multichannel TV Sound program – MTS

Each time you press MTS, the MAIN, SAP (SECOND AUDIO PROGRAM) and BOTH modes are selected in sequence.
The display (in green) for each mode will appear below the channel number for a few seconds.



Note
During SAP and BOTH modes, the sound of non-SAP programs will be muted.

To listen to stereo sound, press MTS to select the MAIN mode.
The MAIN display will appear for a few seconds.

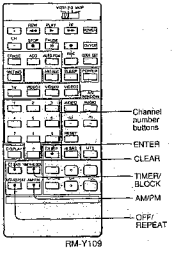
The STEREO indicator lamp on the projection TV will light up whenever a stereo broadcast is received.

1-8. TIMER/BLOCK

Available Functions

Internal clock	Once the internal clock is set, the current time will be displayed on the screen. You must set the clock correctly to activate the program start TIMER and channel Block.
Program start TIMER	Makes a program of your choice appear on the screen automatically at the desired time.
Channel BLOCK	Blocks a channel from appearing on the screen for 12 hours. Use channel BLOCK to prevent children from watching undesirable programs.

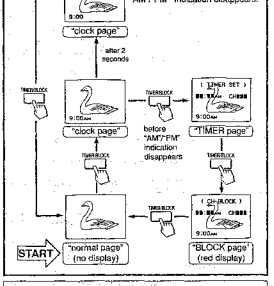
The buttons used for the above functions are located on the Remote Commander.



RM-Y109

To set the internal clock, program start TIMER and channel BLOCK, you need to go into the corresponding "pages": "clock page," "TIMER page" and "BLOCK page."

To change the "pages," press TIMER/BLOCK.



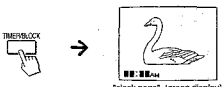
CAUTION

- All settings will be erased from the projection TV's memory if the projection TV is unplugged, or if a power failure occurs.
- The TIMER and BLOCK functions will operate only if the clock is set correctly.
- If the TIMER and BLOCK are set for overlapping times on the same channel, the blocked channel will appear on the screen at the time set on the TIMER.

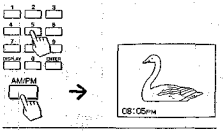
Setting the Internal Clock

EXAMPLE: To set the clock to 8:05 PM

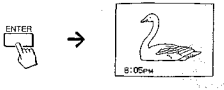
1 From "normal page" (no display), press TIMER/BLOCK once to change to "clock page".



2 Press 0, 8, 0, 5, AM/PM. (You must press the 0's)



3 If you have performed the operation correctly, press ENTER.
The screen display will blink once, indicating that the clock has been set. (The 0 in front will disappear.)



If you make a mistake, press CLEAR and proceed from step 2.
The "AM"/"PM" indication will disappear after a few seconds.

To summon "TIMER page," press TIMER/BLOCK before the "AM"/"PM" indication disappears.

To return to "normal page," press TIMER/BLOCK after the "AM"/"PM" indication has disappeared.

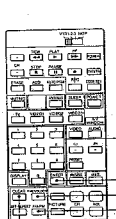
To reset the clock, summon "clock page" and press CLEAR before the "AM"/"PM" indication disappears.
Then follow the steps above from step 2.

12:00 AM stands for midnight.
12:00 PM stands for noon.

Setting Channel BLOCK

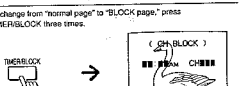
Make sure that the clock has been set correctly before setting channel BLOCK.

EXAMPLE: To set a BLOCK for a program which begins at 9:30 AM on channel 8



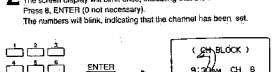
RM-Y109

1 To change from "normal page" to "BLOCK page," press TIMER/BLOCK three times.



"BLOCK page"

2 Press 0, 9, 3, 0, ENTER (you must press the 0's).
The screen display will blink once, indicating that the time has been set.
Press 8, ENTER (0 not necessary).
The numbers will blink, indicating that the channel has been set.



The display BLOCKED will appear for a few seconds, then (CH BLOCK). The Channel BLOCK has now been set.

If you make a mistake, press CLEAR and proceed from step 2.

At the preset time, the picture of the selected channel will be blocked from view and the sound will be muted.
The display "BLOCKED" will appear for a few seconds, then (CH BLOCK) which will remain on the screen during the time the channel is blocked. (Both displays in red)

Normal reception will resume automatically after 12 hours.

To restore normal reception while the channel is blocked, recall "BLOCK page" and press CLEAR.

The BLOCK setting blocks a specified channel for the same 12-hour period every day.

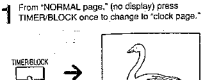
To clear the BLOCK setting, summon "BLOCK page" and press CLEAR.

To reset, clear the setting and follow the steps above from step 2.

Setting the Program Start TIMER

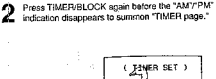
Make sure that the clock has been set correctly before setting the program start TIMER.
EXAMPLE: To set the TIMER for a program which begins at 10:30 PM on channel 12

1 From "NORMAL page," (no display) press TIMER/BLOCK once to change to "clock page."



"clock page"

2 Press TIMER/BLOCK again before the "AM/PM" indication disappears to summon "TIMER page."



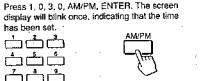
"TIMER page" (green display)

If you make a mistake, press CLEAR and proceed from step 3.

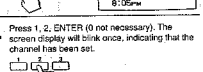
At the preset time, the selected channel will appear on the screen and the TIMER lamp will go out. The TIMER will operate whether you are watching a TV program or a VCR playback, or even if the TV is turned off.

If no button is pressed within 2 hours after the preset time, an "OFF" display will appear on the screen for 1 minute. If a button is still not touched during that minute, the projection TV will turn off automatically as a safety precaution.

3 Press 1, 0, 3, 0, AM/PM, ENTER. The screen display will blink once, indicating that the time has been set.



4 Press 1, 2, ENTER (0 not necessary). The screen display will blink once, indicating that the channel has been set.



The TIMER operates only once, but the time and the channel will remain in the TV's memory.

To preset the same channel at the same time for a future date, press OFF/REPEAT. The TIMER lamp will light up, indicating that the TIMER has been reactivated.

To deactivate the TIMER, press OFF/REPEAT again so that the TIMER lamp goes out. It is not necessary to summon "TIMER page" before using the OFF/REPEAT button. Furthermore, this button is effective even if the TV is turned off.

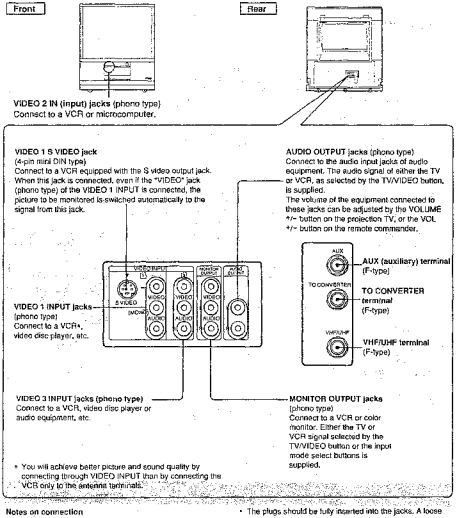
To clear the TIMER setting, summon "TIMER page" and press CLEAR.

To reset, clear the setting and follow the steps from step 3.

1-9. APPLICATION WITH OPTIONAL EQUIPMENT

This projection TV is equipped with various input/output jacks and terminals for connecting optional equipment.

For further details, refer to the page number next to each item.


Front
Rear
VIDEO 2 IN (input) jacks (phono type)
Connect to a VCR or microcomputer.
VIDEO 1 S VIDEO jack
(4-pin mini DIN type)
Connect to a VCR equipped with the S video output jack. When this jack is connected, even if the "VIDEO" jack (phono type) of the VIDEO 1 INPUT is connected, the picture to be monitored is switched automatically to the signal from this jack.
AUDIO OUTPUT jacks (phono type)
Connect to the audio input jacks of audio equipment. The audio signal of either the TV or VCR, as selected by the TV/VIDEO button, is supplied.
The volume of the equipment connected to these jacks can be adjusted by the VOLUME +/- button on the projection TV, or the VOL +/- button on the remote commander.
VIDEO 1 INPUT jacks (phono type)
Connect to a VCR*, video disc player, etc.
AUX (auxiliary) terminal (F-type)
TO CONVERTER terminal (F-type)
VHF/UHF terminal (F-type)
VIDEO 3 INPUT jacks (phono type)
Connect to a VCR, video disc player or audio equipment, etc.
MONITOR OUTPUT jacks (phono type)
Connect to a VCR or color monitor. Either the TV or VCR signal selected by the TV/VIDEO button or the input mode select buttons is supplied.
* You will achieve better picture and sound quality by connecting through VIDEO INPUT than by connecting the VCR only to the antenna terminals.

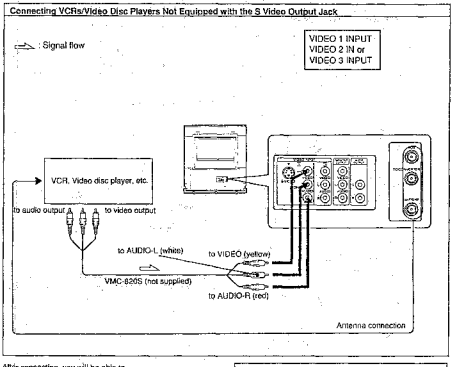
Notes on connection

- Before connecting, make sure you turn off the power on all equipment.
- The plugs should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Match colors when connecting the plugs to the jacks.

1-10. VCR CONNECTION

Connecting Video Equipment

Connecting VCRs/Video Disc Players Not Equipped with the S Video Output Jack



After connecting, you will be able to

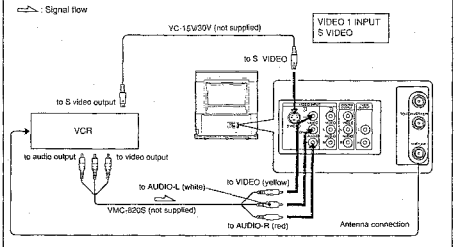
- Play video tapes
- Record TV programs
- Record one TV program while watching another

Caution

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

Connecting Video Equipment

Connecting VCRs Equipped with the S Video Output Jack



After connecting, you will be able to

- Play video tapes
- Record TV programs
- Record one TV program while watching another

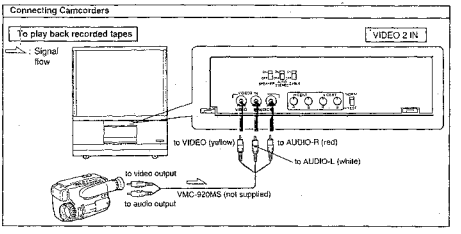
Note

In order to display a video image in a window picture of the Picture-in-Picture feature whether or not it is equipped with an S VIDEO OUTPUT jack, it is necessary to connect input signals through the VIDEO jack of the VIDEO INPUT 1 jacks as well.

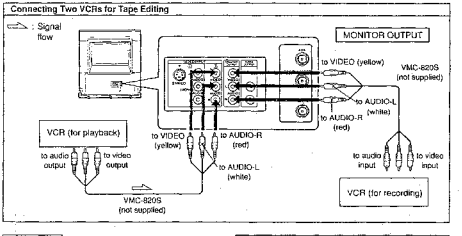
About S Video Input

Video input and output signals may be separated into Y (luminance or brightness) and C (chroma or color) signals. Usually these two signals are combined in a VCR and sent as one signal to a projector. Separation of the Y and C signals prevents them from interfering with one another, thereby improving picture (especially in color) quality. This projection TV is equipped with an S video input jack through which these separated signals can be input directly.

Connecting Camcorders



Connecting Two VCRs for Tape Editing



To Operate

1 Press the desired mode select button or press the TV/VIDEO button so that the desired video source display appears. The VIDEO lamp will light up.

2 Set the playback VCR to the playback mode and set the recording VCR to the recording mode.

To edit the tape, connect the playback VCR to the VIDEO 2 or VIDEO 3 INPUT jacks.

Every time you press the TV/VIDEO button, the display will change as follows:

VIDEO 1⟶VIDEO 2⟶VIDEO 3⟶TV channel

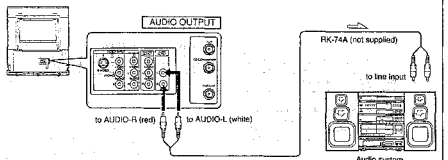
The channel number buttons on the remote commander and the CHANNEL scan buttons will not function while the VIDEO lamp is lit.

1-11. AUDIO SYSTEM CONNECTION

Connecting Audio Equipment

To Monitor TV Sound with a Stereo System

: Signal flow

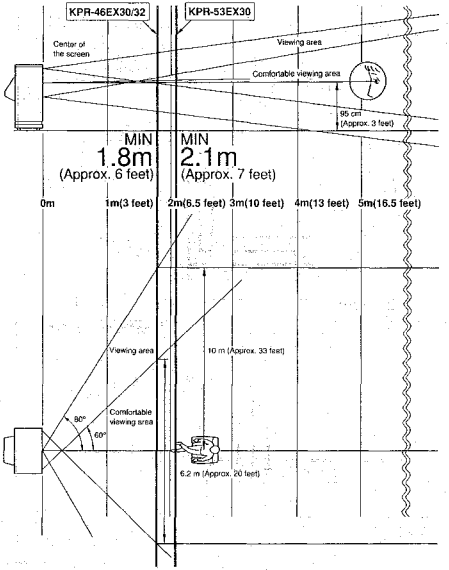


After connecting, you will be able to adjust sound volume from the stereo speakers with the volume buttons on the projection TV or remote commander.

To monitor TV sound only from a stereo system, set the SPEAKER selector on the front panel to OFF.

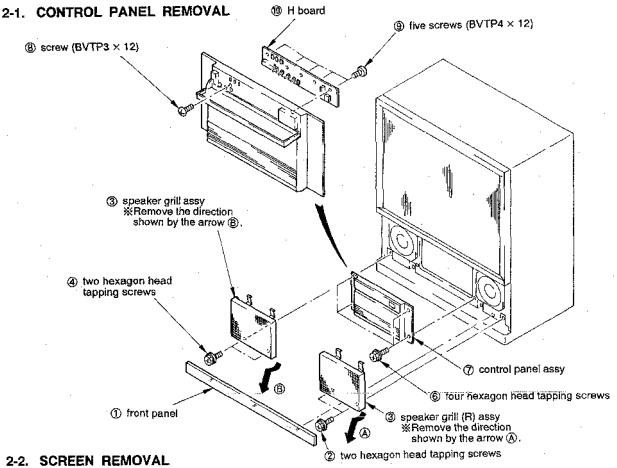
When the SPEAKER selector is set to ON, adjust the volume from the speakers with the stereo amplifier.

1-12. NOTICE ON AUDIENCE AREA

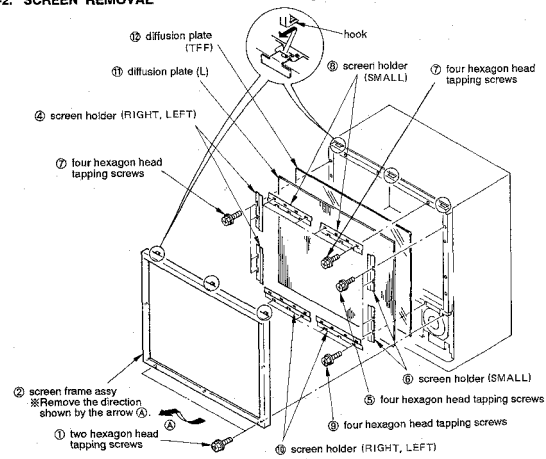


SECTION 2
DISASSEMBLY

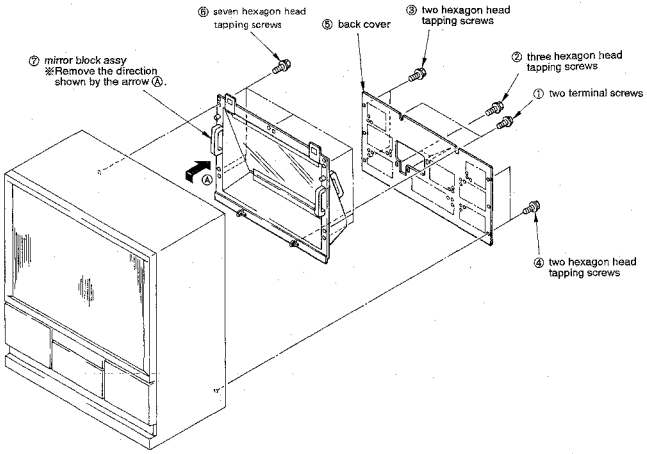
2-1. CONTROL PANEL REMOVAL


⑩ H board
⑨ five screws (BVTP4 × 12)
⑧ screw (BVTP3 × 12)
③ speaker grill assy
※Remove the direction shown by the arrow Ⓑ.
④ two hexagon head tapping screws
⑦ control panel assy
⑥ four hexagon head tapping screws
① front panel
③ speaker grill (R) assy
※Remove the direction shown by the arrow Ⓐ.
② two hexagon head tapping screws

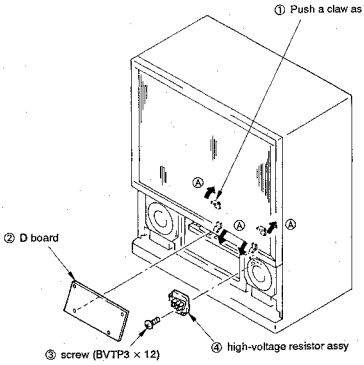
2-2. SCREEN REMOVAL


⑫ diffusion plate (TFF)
hook
⑪ diffusion plate (L)
⑧ screen holder (SMALL)
⑦ four hexagon head tapping screws
④ screen holder (RIGHT, LEFT)
⑦ four hexagon head tapping screws
⑥ screen holder (SMALL)
② screen frame assy
※Remove the direction shown by the arrow Ⓐ.
⑤ four hexagon head tapping screws
⑨ four hexagon head tapping screws
① two hexagon head tapping screws
⑩ screen holder (RIGHT, LEFT)

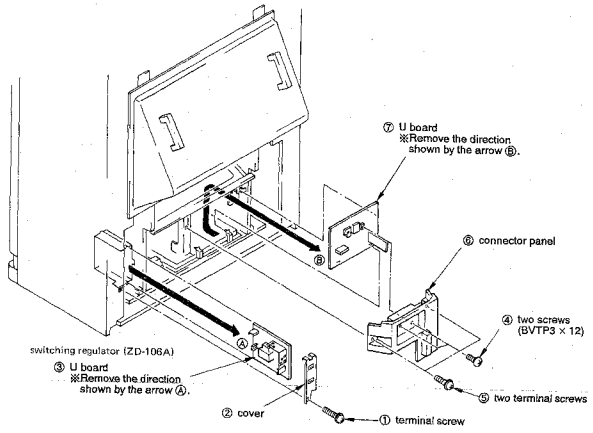
2-3. MIRROR BLOCK ASSY REMOVAL


⑥ seven hexagon head tapping screws
⑤ back cover
③ two hexagon head tapping screws
⑦ mirror block assy
※Remove the direction shown by the arrow Ⓐ.
② three hexagon head tapping screws
① two terminal screws
④ two hexagon head tapping screws

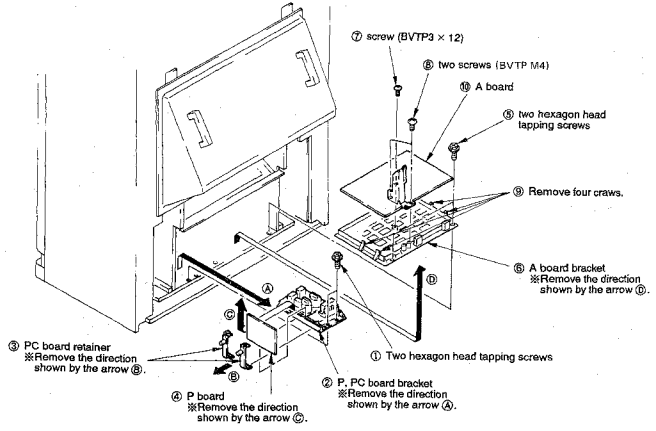
2-4. D BOARD AND HIGH-VOLTAGE RESISTOR ASSY REMOVAL



2-5. SWITCHING REGULATOR, CONNECTOR PANEL AND U BOARD REMOVAL

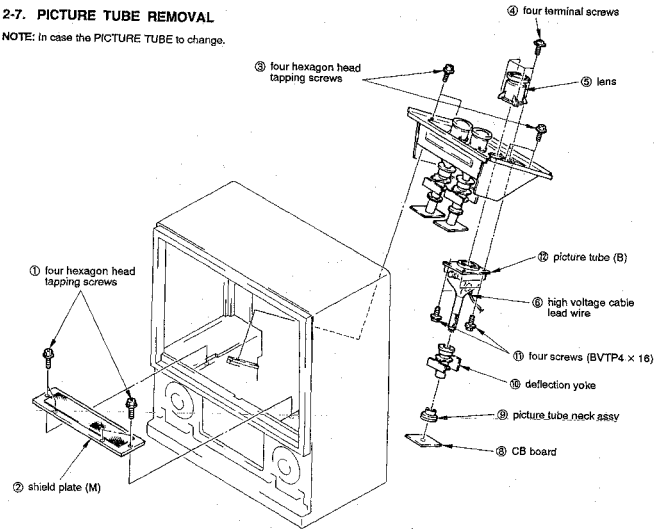

⑦ U board
※Remove the direction shown by the arrow Ⓑ.
⑥ connector panel
④ two screws (BVTP3 × 12)
switching regulator (ZD-106A)
③ U board
※Remove the direction shown by the arrow Ⓐ.
⑤ two terminal screws
② cover
① terminal screw

2-6. P AND A BOARDS REMOVAL

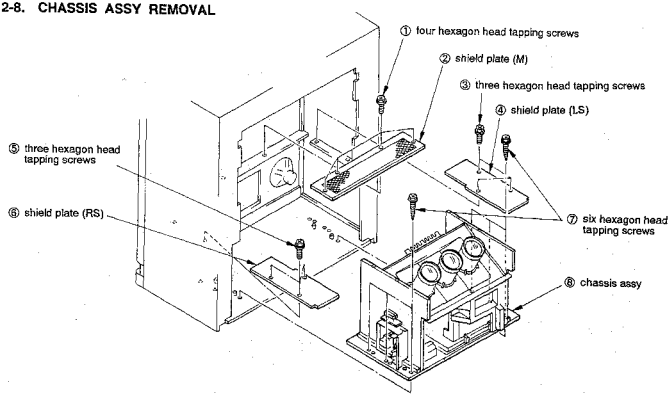

⑦ screw (BVTP3 × 12)
⑧ two screws (BVTP M4)
⑩ A board
⑤ two hexagon head tapping screws
⑨ Remove four claws.
⑥ A board bracket
※Remove the direction shown by the arrow Ⓓ.
③ PC board retainer
※Remove the direction shown by the arrow Ⓑ.
① Two hexagon head tapping screws
② P, PC board bracket
※Remove the direction shown by the arrow Ⓐ.
④ P board
※Remove the direction shown by the arrow Ⓒ.

2-7. PICTURE TUBE REMOVAL

NOTE: In case the PICTURE TUBE to change.

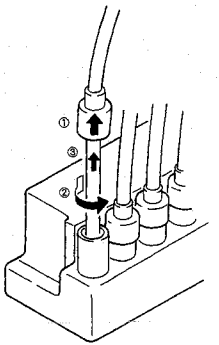

④ four terminal screws
③ four hexagon head tapping screws
⑤ lens
⑫ picture tube (B)
① four hexagon head tapping screws
⑥ high voltage cable lead wire
⑪ four screws (BVTP4 × 16)
⑩ deflection yoke
⑨ picture tube neck assy
⑧ CB board
② shield plate (M)

2-8. CHASSIS ASSY REMOVAL


① four hexagon head tapping screws
② shield plate (M)
③ three hexagon head tapping screws
④ shield plate (LS)
⑤ three hexagon head tapping screws
⑥ shield plate (RS)
⑦ six hexagon head tapping screws
⑧ chassis assy

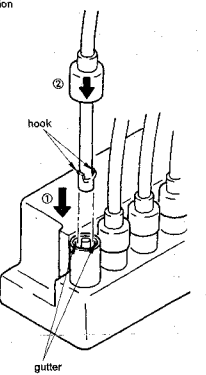
2-9. HIGH-VOLTAGE CABLE INSTALLATION AND REMOVAL

(1) Remover



② Pressing cable, turn 90°

(2) Installation



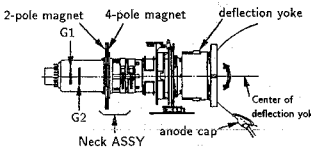
② Assure cable is locked.
※HV cable will be locked, if inserted along the HV block gutter.

SECTION 3
SET-UP ADJUSTMENTS

NOTE : CAUTION FOR ADJUSTMENT
When you perform setup adjustment, electric adjustment, and adjustment for replaced PICTURE TUBE, you should not keep any clearance between PICTURE TUBE and DY (deflection yoke).

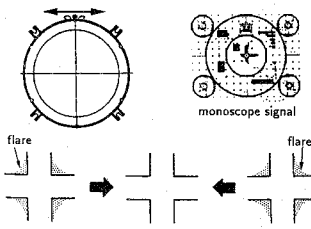
3-1. FOCUS LENS ADJUSTMENTS

1. Check that VR of D board (registration adjustment) and VR (CENT) are at the mechanical center.

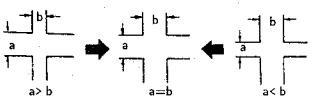


Note : Align the Neck Assy with the face of G3.

2. Input a monoscope signal and make rough adjustment of white balance at BRIGHTNESS 50% and PICTURE 0%.
3. Set BRIGHTNESS and PICTURE maximum and change the NOR/TEST switch to TEST and HATCH/BAR select switch to HATCH to show cross hatch.
4. Cover a lens cap on the red and blue lenses and project green only.
5. Rotate the green lens and adjust to obtain the best lens focus.



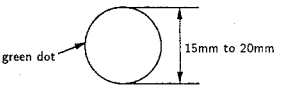
6. Rotate the green focus volume of the focus pack and adjust to obtain the best electric focus.



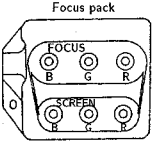
7. Repeat steps 5, and 6, track, then adjust to obtain the best focus.
8. Tighten the green lens screws and fix the lens.
9. Adjust the red and blue focuses similarly.

3-2. ADJUSTMENTS OF 4-POLE MAGNET

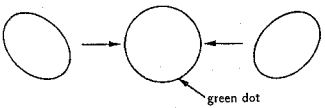
1. Receive dot signal.
2. Set PICTURE to maximum, and BRIGHTNESS to 50%.
3. Turn green focus volume of the focus pack clockwise, and adjust the spot size shown as below.
   (So it stands out in the center of the screen.)



Focus pack



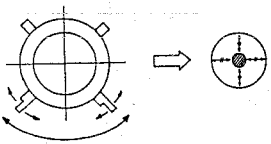
4. Make the spot round by adjusting the 4-pole magnet for spot adjustment as shown below.
   NOTE : Adjust the 4-pole magnet by closing and opening the upper and lower magnet layers while rotating it left and right to make the spot round.



5. Adjust the red and blue focuses similarly.

3-3. ADJUSTMENTS OF 2-POLE MAGNET

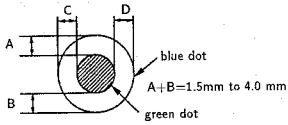
1. Receive dot signal.
2. Cover red and blue lens. (See only green dot.)
3. Turn green focus volume counterclockwise from just-focus position and then confirm that diameter of the dot becomes bigger.
4. Adjust the luminous point to be the center of the dot by 2-pole magnet.



5. Turn focus volume clockwise to be "just focus".
6. Adjust the red and blue 2-pole magnet similarly.

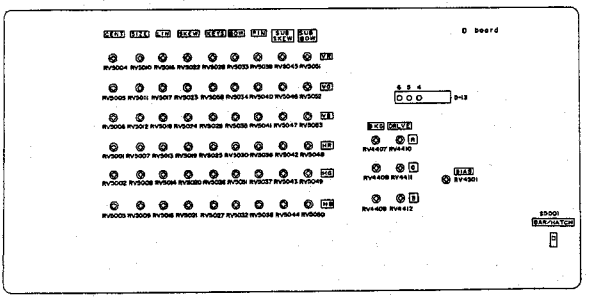
3-4. ADJUSTMENT (BLUE) OF DEFOCUS

1. Receive dot signal.
2. Set PICTURE to maximum, and set BRIGHTNESS to 50%.
3. Turn blue focus volume of the focus pack clockwise until the diameter of the blue dot becomes bigger (1.5mm to 4.0mm) than that of green.



NOTE: C+D = Less than 4.0 mm.

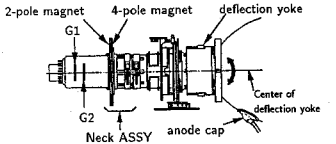
【D board】



(Component side)

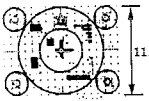
3-5. GREEN PICTURE ADJUSTMENTS

1. Input a monoscope signal.
2. Cover a lens cap on the red and blue lenses and project green only.
3. Adjust the green deflection yoke to make the monoscope horizontal center line horizontal, then fix the deflection yoke. Adjust the green neck ass'y to obtain a match with the green deflection yoke center and fix it.

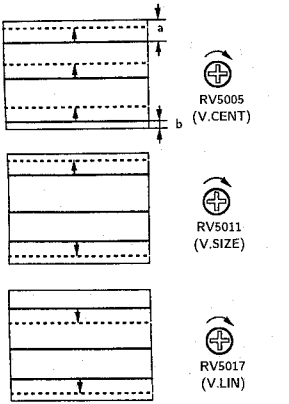


Note: Align the Neck Assy with the face of G3.

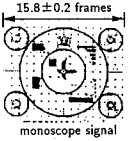
4. Rotate RV5017 (V LIN) on the D board to obtain the best linearity in the V direction. Rotate RV5011 (V SIZE) to adjust the V size to $11.80 \pm \frac{0.1}{0.2}$ frames and rotate RV5005 (V CENT) to adjust the V center to the screen center.

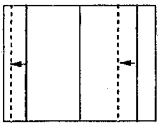


monoscope signal

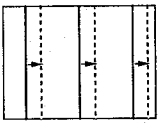


5. Rotate RV5014 (H LIN G) on the D board to obtain the best linearity in the H direction, rotate RV5008 (H SIZE) to adjust the H size to 15.8± 0.2 frames and rotate RV5002 (H CENT) to adjust the H center to the screen center.

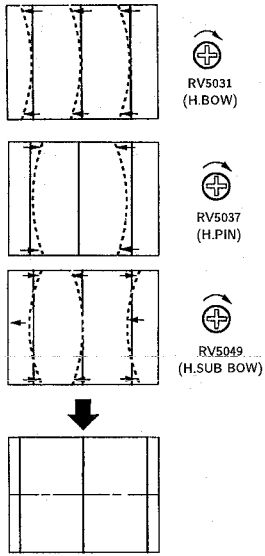




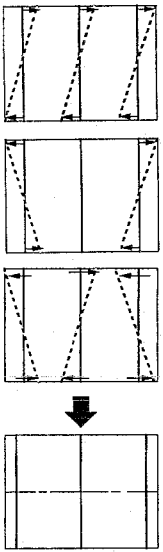
6. Rotate RV5002 (H CENT G) to adjust the H center to the screen center.



7. Set the NOR/TEST selector switch to TEST and HATCH/BAR selector switch to HATCH.
Rotate RV5031 (H BOW G), RV5037 (H PIN G), and RV5049 (H SUB BOW G) to adjust as shown below.

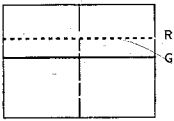


8. Correct tilting of the vertical center line using RV5020 (H SKEW G) and make the line perpendicular.
Rotate RV5026 (H KEYS G) to correct the tilting at both left and right edges to be in the same direction and in the same quantity. Rotate RV5043 (H SUB SKEW G) to correct the titling of the left, right, and center vertical lines to be in the same direction and same quantity.
Rerotate RV5020 (H SKEW G) to eliminate tilting of all the vertical lines.

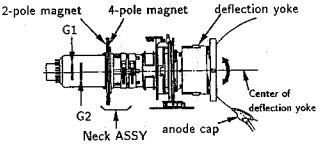


3-6. GREEN AND RED VERTICAL REGISTRATION

1. Cover a lens cap on the blue lens and receive a monoscope signal.
2. Set the NOR/TEST select switch to TEST and HATCH/BAR to HARTCH, rotate the red DY so that the horizontal center lines of green and red match, then fix the red DY.

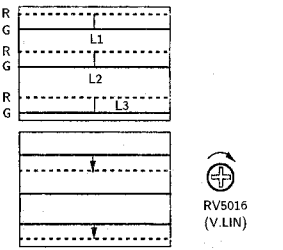


3. Align the red neck ass'y center to the red DY center and fix.

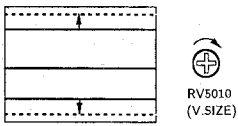


Note : Align the Neck Assy with the face of G3.

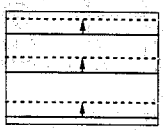
4. Rotate RV5016 (V LINE R) on the D board to equalize the slip quantities of the red and green horizontal lines.



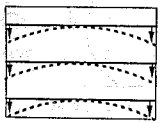
5. Rotate RV5010 (V SIZE R) on the D board to slightly reduce the vertical width of the picture.



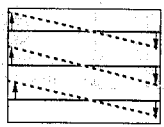
6. Rotate RV5004 (V CENT R) on the D board to V center to the screen center.



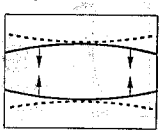
7. Rotate RV5033 (V BOW R) on the D board to overlap the green and red horizontal lines.



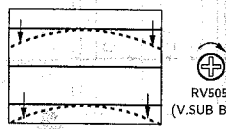
8. Rotate 5022 (V SKEW R) to make the red horizontal lines parallel to the green horizontal lines.



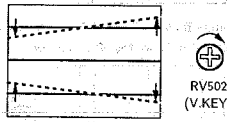
9. Repeat step 6.
10. Rotate RV5039 (V PIN R) on the D board to overlap the green and red horizontal.



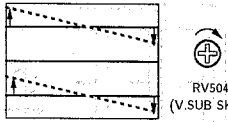
11. Rotate RV5051 (V SUB BOW R) on the D board to adjust the red horizontal lines in the same direction and quantity to the green horizontal lines. (Top and bottom edges.)



12. Repeat step 7.
13. Rotate RV5028 (V KEYS R) on the D board to adjust tilting of the red horizontal lines relative to the green horizontal lines at the top and bottom edges.



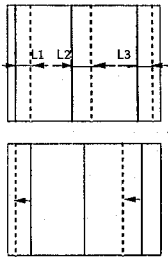
14. Rotate RV5045 (V SUB SKEW R) to equalize the tilting of the red horizontal lines relative to the green horizontal lines in top, bottom, and center.



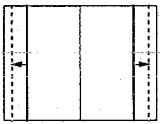
15. Repeat step 8.

3-7. GREEN AND RED HORIZONTAL REGISTRATION

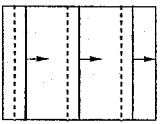
1. Rotate RV5013 (H LINE R) to equalize the slip quantities of the red and green vertical lines.



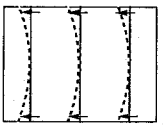
2. Rotate RV5007 (H SIZE R) to slightly reduce the left and right widths of the picture.



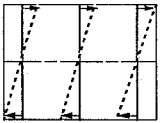
3. Rotate RV5001 (H CENT R) on the D board to H center to the screen center.



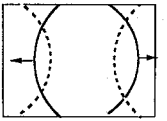
4. Rotate RV5030 (H BOW R) to overlap the green and red horizontal lines.



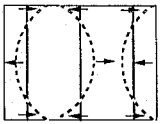
5. Rotate RV5019 (H SKEW R) to make the red and green vertical lines parallel.



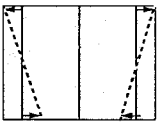
6. Repeat step 3.
7. Rotate RV5036 (H PIN R) on the D board to overlap the green and red vertical lines.



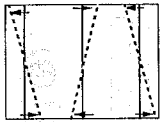
8. Rotate RV5048 (H SUB BOW R) to equalize the directions and quantities of the green and red vertical lines.



9. Repeat step 4.
10. Rotate RV5025 (H KEYS R) to adjust tilting of the red vertical lines relative to the green vertical lines at left and right edges.



11. Rotate RV5042 (H SUB SKEW R) to adjust tilting of the red vertical lines relative to green vertical lines at left, right, and center.

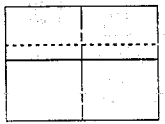


RV5042
(H.SUB SKEW)

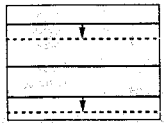
12. Repeat step 5.

3-8. GREEN AND BLUE VERTICAL REGISTRATION

1. Cover a lens cap on the red lens and receive a monoscope signal.

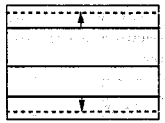


2. Set the NOR/TEST selector switch to TEST and HATCH/BAR switch to HATCH, rotate the blue DY to align the horizontal center lines of green and blue, then fix the blue DY.
3. Align the blue neck ass'y center to the blue DY center and fix them.
4. Rotate RV5018 (V LINE B) to equalize the slip quantities of the blue and green horizontal lines.



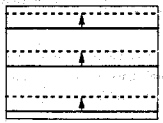
RV5018
(V.LINE)

5. Rotate RV5012 (V SIZE B) to slightly reduce the widths at top and bottom of the picture.



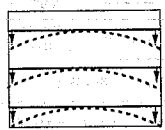
RV5012
(V.SIZE)

6. Rotate RV5006 (V CENT B) on the D board to V center to the screen center.



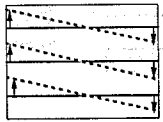
RV5006
(V.CENT B)

7. Rotate RV5035 (V BOW B) to overlap the green and blue horizontal lines.



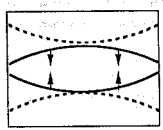
RV5035
(V BOW)

8. Rotate RV5024 (V SKEW B) to make the blue and green horizonal lines parallel.



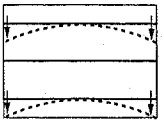
RV5024
(V SKEW)

9. Repeat step 6.
10. Rotate RV5041 (V PIN B) on the D board to overlap the green and blue vertical lines.



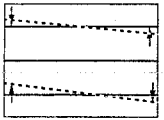
RV5041
(V PIN B)

11. Rotate RV5053 (V SUB BOW B) to make the directions and quantities of the blue and green horizontal lines equal.



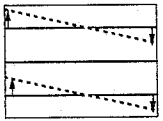
RV5053
(V SUB BOW)

12. Repeat step 7.
13. Rotate RV5029 (V KEYS B) to adjust tilting of the blue horizontal lines relative to the green horizontal lines at top and bottom.



RV5029
(V KEYS)

14. Rotate RV5047 (V SUB SKEW B) to equalize tilting of the blue horizontal lines relative to the top, bottom, and center green horizontal lines.

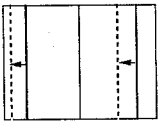


RV5047
(V.SUB SKEW)

15. Repeat step 8.

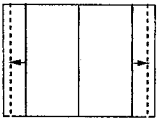
3-9. GREEN AND BLUE HORIZONTAL REGISTRATION

1. Rotate RV5015 (H LIN B) to equalize the slip quantities of the blue and green vertical lines.



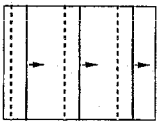
RV5015
(H LIN)

2. Rotate RV5009 (H SIZE B) and slightly reduce the left and right widths of the pictures.



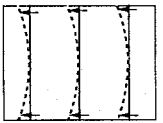
RV5009
(H SIZE)

3. Rotate RV5003 (H CENT B) on the D board to H center to the screen center.



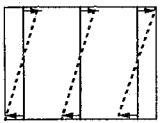
RV5003
(H.CENT B)

4. Rotate RV5032 (H BOW B) to overlap the green and blue horizontal lines.



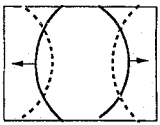
RV5032
(H BOW)

5. Rotate RV5021 (H SKEW B) to make blue and green vertical lines parallel.



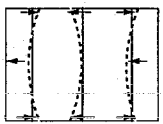
RV5021
(H SKEW)

6. Repeat Step 3.
7. Rotate RV5038 (H PIN B) on the D board to overlap the green and blue horizontal lines.



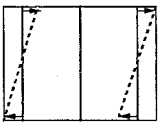
RV5038
(H PIN B)

8. Rotate RV5050 (H SUB BOW B) to equalize directions and quantities of the green and blue vertical lines.



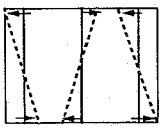
RV5050
(H SUB BOW)

9. Repeat step 4.
10. Rotate RV5027 (H KEYS B) to adjust tilting of the blue vertical lines relative to the green vertical lines at the left and right edges.



RV5027
(H KEYS)

11. Adjust tilting of the blue vertical lines relative to the left, right, and center green vertical liens by rotating RV5044 (H SUB SKEW B).

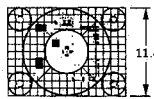


RV5044
(H SUB SKEW)

12. Repeat step 5.

3-10. WHITE BALANCE, G2 ADJUSTMENT

1. Set R. BKG VR (RV4407), G BKG VR (RV4408) and B.BKG VR (RV4409) on D board to mechanical center.
2. Set R.DRIVE VR (RV4410) and B.DRIVE VR (RV4412) to mechanical center, and G.DRIVE VR (RV4411) to maximum.
3. Power the set, make BRIGHTNESS to the reset state, set PICTURE to minimum, and input monoscope signal.
4. Disconnect D-5 (G.OUT) and D-6 (B.OUT) on D board and make the screen red only.
5. Adjust with the screen VR on the focus pack so that 20 IRE of the monoscope signal slightly glows.
6. In case of green or blue, adjust in the same procedure as the item 5 with each of connector D-5 or D-8 on D board.



monoscope signal

3-11. WHITE BALANCE ADJUSTMENT

1. Input white signal and set BRIGHTNESS and PICTURE to minimum.
2. Adjust white balance with R. BKG VR (RV4407), G. BKG VR (RV4408) and B. BKG VR (RB 4409) on D board.
3. Set BRIGHTNESS and PICTURE to maximum.
4. Adjust white balance with R.DRIVE VR (RV 4410), G. DRIVE VR (RV4411) and B. DRIVE VR (RV4412) on D board, then set G. DRIVE VR close to maximum position.

SECTION 4
SAFETY RELATED ADJUSTMENTS

4-1. SAFETY RELATED ADJUSTMENTS

When replacing the following components, make the HV, HOLD DOWN adjustments.	
IC804, Q804, D806, D808, C819, R807, R829, R830, R831, R832, R833, R837, R838, R839, R840, R841, HV BLOCK	(◪) P board
When replacing the following components, make the HV, REGULATOR adjustments.	
IC803, IC805, D807, C818, R824, R825, R826, R827, R838, R834, R835, R836, R864, R865, HV BLOCK	(◪) P board
When replacing the following components, make the BEAM CURRENT PROTECTOR adjustments.	
IC802, IC804, Q804, Q805, Q807, Q808, D808, D809, D811, D812, D816, R807, R810, R839, R840, R841, R843, R844, R846, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857,	(◪) P board

B+ VOLTAGE CONFIRMATION

The following adjustment should always be performed when replacing IC601 and R621.

(1) Supply AC130V from a variable auto-transformer.
(2) Receive a monoscope signal.
(3) Set the PICTURE control to maximum and the BRIGHTNESS control to reset.
(4) Connect a digital multimeter to pin ⑨ (B+line) of the G-2 connector on the G board.
(5) Confirm the voltage on digital multimeter is 115.0±2.0 VDC.

OVP (overvoltage protector) CIRCUIT (⋈R690, R691)

The following adjustment should always be performed when replacing R620, R690, R691, R692 and D633.

(1) Supply AC120V with a variable auto-transformer.
(2) Receive a monoscope signal.
(3) Set the PICTURE and BRIGHTNESS controls to maximum.
(4) Connect an external power supply pin ⑨ (B+ line) of the G-2 connector on the G board through a diode (U05E).
(5) Connect the digital multimeter to the B+ line.
(6) Turn on the set power supply, slowly increase the voltage of the external power supply and increase a B+ line voltage between B+ line and ground, and confirm that the B+ line voltage in which OVP circuit is activated and raster disappears is 127.5±7.5 VDC.

BEAM CURRENT PROTECTOR CIRCUIT (⋈R852)

(1) Supply AC120V with a variable auto-transformer.
(2) Receive a monoscope signal.
(3) Set the BRIGHTNESS control to maximum and the PICTURE control to minimum.
(4) Short between base of the Q4434 and 12V line on the D board with a jumper wire.
(5) Short between the collector and emitter of Q807 on the P board with a jumper wire.
(6) Disconnect the P-8 connector of the P board.
(7) Connect the ABL current jig. (Fig-1)
NOTE : Connect the Positive Plug (1P mini) to P-8 connector of the P board.
Solder the negative lead to ABL terminal of the PC board.

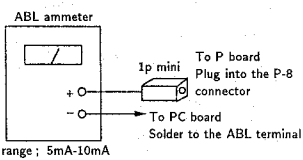


Figure 1

(8) Turn on the power supply, and rotate the PICTURE control and confirm that the ABL current in which BEAM CURRENT PROTECTOR circuit is activated and raster disappears is less than 3500 μA.

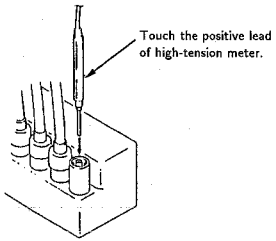
(9) Turn off the power supply, and remove a jumper wire from Q807.
(10) Set the BRIGHTNESS control to maximum and the PICTURE control to minimum.
(11) Short between collector and emitter of Q808 on the D board.
(12) Turn on the power supply, and rotate the PICTURE control and confirm that the ABL current in which BEAM CURRENT PROTECTOR circuit is activated and raster disappears is less than 3500 μA.
(13) Remove a jumper wire from Q808 and Q4434, disconnect the ABL current jig and reconnect the P-8 connector on the P board.

4-2. HV-HOLD DOWN AND HV-REGULATOR ADJUSTMENT

* Using a high-tension meter

1. HV-HOLD DOWN CIRCUIT (⋈R830, R831)

(1) Receive a completely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
* Make sure sync is being applied.
(2) Make sure that the power switch is turned off.
(3) Connect the positive lead of the high-tension meter to the HV block and the negative lead to the chassis ground.
(4) Disconnect the R826 and R827 resistances from the P board and connect a variable resistor Ⓐ (50 kΩ) between the terminals.
* Set the variable resistor Ⓐ to minimum.
(5) Disconnect the R830 and R831 resistances from the P board and connect a variable resistor Ⓑ (50 kΩ) between the terminals.
* Set the variable resistor to minimum.
(6) Turn on the power supply and adjust the variable resistor Ⓐ so that the high-tension meter indicates 33.5±0.5 KVDC.
(7) Slowly turn the variable resistor Ⓑ and set at the position where the HV-HOLD DOWN circuit operates and raster disappears.
(8) Turn off the power supply, disconnect variable resistor Ⓑ and measure the resistance value using a digital multimeter.
(9) Select and mount resistors R830 and R831 so that the total series resistance is equal to the value measured in item (8).
(10) Turn on the power supply, and slowly turn variable resistor Ⓐ and confirm that the voltage is 33.5±0.5 kV whereby the raster disappears during operation of HV-HOLD DONW circuit.



* Using a high-tension meter.

2. HV-REGULATOR CIRCUIT (⋈R826, R827)

(1) Receive a dot signal and set the PICTURE and BRIGHTNESS controls to minimum.
* Make sure sync is applied.
(2) Make sure that the power switch is turned off.
(3) Connect the positive lead of the high-tension meter to the HV block and the negative lead to the chassis ground.
(4) Disconnect the R826 and R827 resistances from the P board and connect a variable resistor © (50kΩ) between the terminals.
* Set the variable resistor to maximum.
(5) Turn on the power supply and adjust the variable resistor © so that the high-tension meter indicates 31.5±0.5 KV.
(6) Disconnect variable resistor © and measure the resistance value using a digital multimeter.
(7) Select and mount resistors R826 so that the total series resistance is equal to the value measured in item (6).
(8) Turn on the power supply and check if the high-tension meter indicates 31.5±0.5 kV.
(9) Turn off the power supply, disconnect the high-tension meter and return to the original status.

* When a high-tension meter is not available.

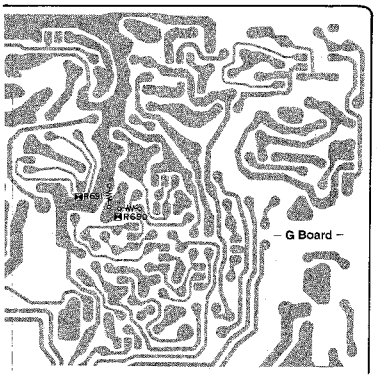
1. HV-HOLD DOWN CIRCUIT (⋈R830, R831)

(1) Receive a completely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
* Make sure sync is applied.
(2) Make sure that the power switch is turned off.
(3) Disconnect the R826 and R827 resistance from the P board and connect a variable resistor Ⓓ (50 kΩ) between the terminals.
* Set the variable resistor to maximum.
(4) Disconnect the R830 and R831 resistances from the P board and connect a variable resistor Ⓔ (50 kΩ) between the terminals.
* Set the variable resistor to minimum.
(5) Connect a digital multimeter between D801 (cathode) and chassis ground.
(6) Turn on the power supply and adjust the variable resistor Ⓓ so that the multimeter indicates DC134.0V.
(7) Turn the variable resistor Ⓕ and set to the position where the HV-HOLD DOWN circuit operates and raster disappears.
(8) Turn off the power supply, disconnect variable resistor Ⓕ and measure the resistance value.
(9) Select and mount resistors R830 and R831 so that the total series resistance is equal to the value measured in item (8).
(10) Turn on the power supply and adjust the variable resistor Ⓓ so that the multimeter indicates DC134.0±1.0V the instant the HV-HOLD DOWN circuit operates and raster disappears.

* When a high-tension meter is not available.

HB-REGULATOR CIRCUIT (⋈R826, R827)

(1) Receive a completely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
* Make sure sync is applied.
(2) Make sure that the power switch is turned off.
(3) Disconnect the R826 and R827 resistance from the P board and connect a variable resistor Ⓕ (50 kΩ) between the terminals.
* Set the variable resistor to maximum.
(4) Connect a digital multimeter between D801 (cathode) and chassis ground.
(5) Turn on the power supply and adjust the variable resistor Ⓕ so that the multimeter indicates DC125.0±0.5V.
(6) Turn off the power supply, disconnect variable resistor Ⓕ and measure the resistance value.
(7) Select and mount resistors R826 and R827 so that the total series resistance is equal to the value measured in item (6).
(8) Turn on the power supply and check if the D801 cathode voltage is DC125±1.0V.
(9) Turn off the power supply and disconnect the digital multimeter.



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positive lead
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R826, R827)

PICTURE and
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sistances from
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imum.
d adjust the
e high-tension

d measure the
timeter.

(7) Select and mount resistors R826 so that the total series resistance is equal to the value measured in item (6).
(8) Turn on the power supply and check if the high-tension meter indicates 31.5±0.5 kV.
(9) Turn off the power supply, disconnect the high-tension meter and return to the original status.

* When a high-tension meter is not available.

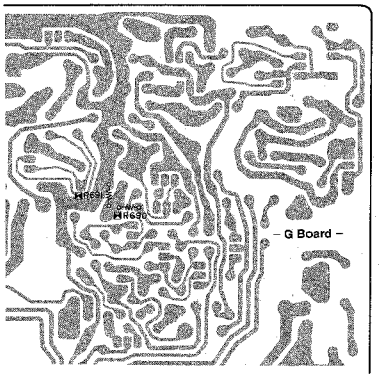
1. HV-HOLD DOWN CIRCUIT (⧓R830, R831)

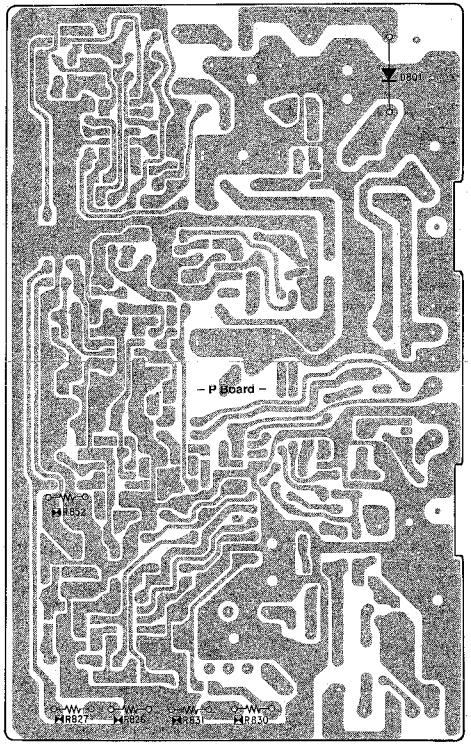
(1) Receive a completely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
* Make sure sync is applied.
(2) Make sure that the power switch is turned off.
(3) Disconnect the R826 and R827 resistance from the P board and connect a variable resistor Ⓓ (50 kΩ) between the terminals.
* Set the variable resistor to maximum.
(4) Disconnect the R830 and R831 resistances from the P board and connect a variable resistor Ⓔ (50 kΩ) between the terminals.
* Set the variable resistor to minimum.
(5) Connect a digital multimeter between D801 (cathode) and chassis ground.
(6) Turn on the power supply and adjust the variable resistor Ⓓ so that the multimeter indicates DC134.0V.
(7) Turn the variable resistor Ⓔ and set to the position where the HV-HOLD DOWN circuit operates and raster disappears.
(8) Turn off the power supply, disconnect variable resistor Ⓔ and measure the resistance value.
(9) Select and mount resistors R830 and R831 so that the total series resistance is equal to the value measured in item (8).
(10) Turn on the power supply and adjust the variable resistor Ⓓ so that the multimeter indicates DC134.0±1.0V the instant the HV-HOLD DOWN circuit operates and raster disappears.

* When a high-tension meter is not available.

HB-REGULATOR CIRCUIT (⧓R826, R827)

(1) Receive a completely white signal and set the PICTURE and BRIGHTNESS controls to maximum.
* Make sure sync is applied.
(2) Make sure that the power switch is turned off.
(3) Disconnect the R826 and R827 resistance from the P board and connect a variable resistor Ⓕ (50 kΩ) between the terminals.
* Set the variable resistor to maximum.
(4) Connect a digital multimeter between D801 (cathode) and chassis ground.
(5) Turn on the power supply and adjust the variable resistor Ⓕ so that the multimeter indicates DC125.0±0.5V.
(6) Turn off the power supply, disconnect variable resistor Ⓕ and measure the resistance value.
(7) Select and mount resistors R826 and R827 so that the total series resistance is equal to the value measured in item (6).
(8) Turn on the power supply and check if the D801 cathode voltage is DC125±1.0V.
(9) Turn off the power supply and disconnect the digital multimeter.

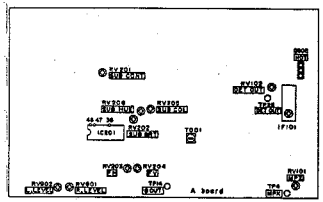




SECTION 5
CIRCUIT ADJUSTMENTS

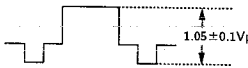
5-1. A BOARD ADJUSTMENTS

(Component Side)



DET OUT ADJUSTMENT (RV102)

1. Receive entirely white signal.
2. Connect an oscilloscope to TP26 on the A board.
3. Adjust RV102 so that voltage is 1.05±0.1 Vp-p.

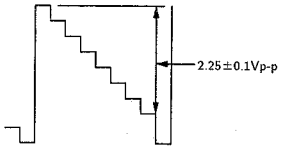


AF AGC ADJUSTMENT (IF PACK)

1. Receive a color-bar signal.
2. Connect a digital multimeter to TP3 on the A board.
3. Adjust AGC VR (AGC VR of IF 101) so that voltage is between 6.5 VDC and 7.0 VDC.

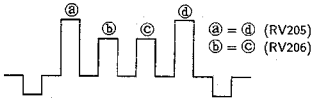
SUB CONT ADJUSTMENT (RV201)

1. Receive a color-bar signal.
   - PICTURE ..... Maximum
   - BRIGHTNESS ..... Center
   - COLOR ..... Minimum
2. Connect an oscilloscope to TP14 on the A board.
3. Disconnect the D-4, D-5 and D-6 connector in the D board.
4. Adjust RV201 so that voltage is 2.25±0.1 Vp-p.



SUB COL, SUB HUE ADJUSTMENT (RV205, RV206)

1. Receive a color-bar signal.
2. • PICTURE ..... Maximum
   • COLOR ..... RESET
   • HUE ..... RESET
   • SHARPNESS ..... RESET
3. Connect an oscilloscope to TP14 on the A board.
4. Adjust RV205 (SUB COL) so that the ⓐ coincides with ⓓ as shown in figure.
5. Adjust RV206 (SUB HUE) so that the ⓑ coincides with ⓒ as shown in figure.



fH ADJUSTMENT (RV203)

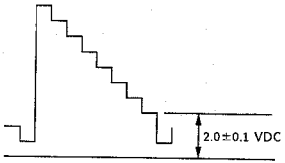
1. Short circuit between pin ㊽ of IC201 and pin ㊳ of IC201 with a jumper wire.
2. Connect a frequency counter to base of Q502.
3. Adjust RV203 for 15,700Hz±50Hz.

fV ADJUSTMENT (RV204)

1. Short circuit between pin ㊼ of IC201 and pin ㊳ of IC201 with a jumper wire.
2. Connect a frequency counter to emitter of Q209.
3. Adjust RV204 for 55.0±0.3Hz.

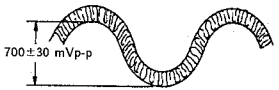
SUB BRT ADJUSTMENT (RV202)

1. Receive a color-bar signal.
2. • PICTURE ..... Maximum
   • BRIGHTNESS ..... Center
   • COLOR ..... Minimum
3. Connect an oscilloscope to TP14 on the A board.
4. Disconnect the D-4, D-5 and D-6 connector in the D board.
5. Adjust RV202 so that voltage is 2.0±0.1 Vp-p.



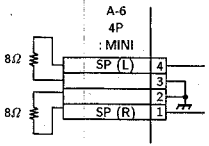
MPX OUT LEVEL ADJUSTMENT (RV101)

1. Receive 400Hz (100% modulation) sound signal to pin ② of IF101.
2. Connect the oscilloscope to TP4 on the A board.
3. Adjust RV101 so that the MPX level is 700±30 mVp-p.



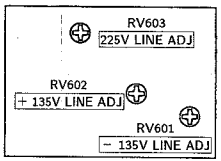
R, L LEVEL ADJUSTMENT (RV901, RV902)

1. Receive 400Hz (100% modulation) sound signal to pin ② of IF101.
2. Connect the 8Ω resistor to pin ① (SP R) and pin ④ (SP L) of A6 connector and ground.
3. Connect the RMS meter to 8Ω resistor.
4. Maximum to VOLUME.
5. Adjust RV901 (L LEVEL) and RV902 (R LEVEL) to obtain 13.5±0.1 Vrms reading on the RMS meter.



5-2. G BOARD ADJUSTMENTS

(Component Side)



– 135V LINE ADJUSTMENT (RV601)

1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q604.
3. Adjust RV601 so that voltage is –135V±1.0V.

+ 135V LINE ADJUSTMENT (RV602)

1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q603.
3. Adjust RV602 so that voltage is +135V±1.0V.

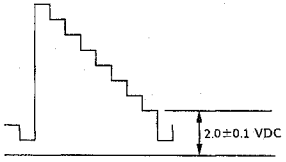
225V LINE ADJUSTMENT (RV603)

1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q614.
3. Adjust RV603 so that voltage is 225V±0.5V.

MEMO

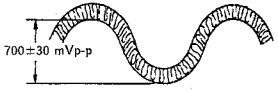
SUB BRT ADJUSTMENT (RV202)

1. Receive a color-bar signal.
2. • PICTURE ····· Maximum
   • BRIGHTNESS ····· Center
   • COLOR ····· Minimum
3. Connect an oscilloscope to TP14 on the A board.
4. Disconnect the D-4, D-5 and D-6 connector in the D board.
5. Adjust RV202 so that voltage is 2.0±0.1 Vp-p.



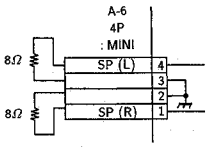
MPX OUT LEVEL ADJUSTMENT (RV101)

1. Receive 400Hz (100% modulation) sound signal to pin ② of IF101.
2. Connect the oscilloscope to TP4 on the A board.
3. Adjust RV101 so that the MPX level is 700±30 mVp-p.

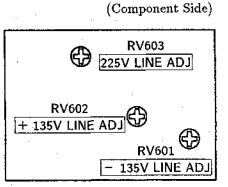


R, L LEVEL ADJUSTMENT (RV901, RV902)

1. Receive 400Hz (100% modulation) sound signal to pin ② of IF101.
2. Connect the 8Ω resistor to pin ① (SP R) and pin ④ (SP L) of A6 connector and ground.
3. Connect the RMS meter to 8Ω resistor.
4. Maximum to VOLUME.
5. Adjust RV901 (L LEVEL) and RV902 (R LEVEL) to obtain 13.5±0.1 Vrms reading on the RMS meter.



5-2. G BOARD ADJUSTMENTS



− 135V LINE ADJUSTMENT (RV601)

1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q604.
3. Adjust RV601 so that voltage is −135V±1.0V.

+ 135V LINE ADJUSTMENT (RV602)

1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q603.
3. Adjust RV602 so that voltage is +135V±1.0V.

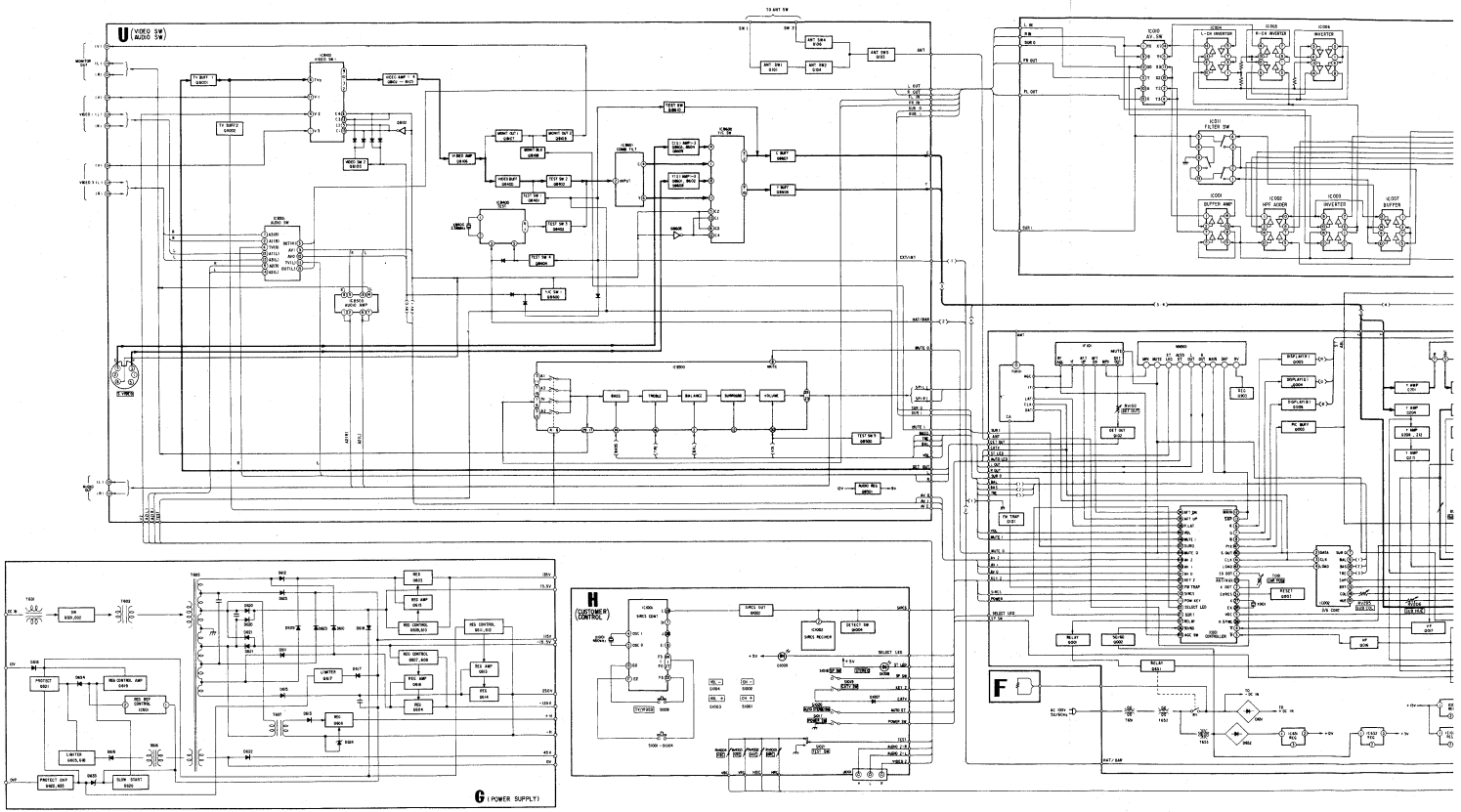
225V LINE ADJUSTMENT (RV603)

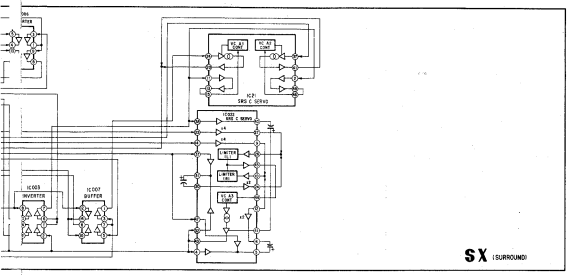
1. Receive a color-bar signal.
2. Connect a digital multimeter to emitter of Q614.
3. Adjust RV603 so that voltage is 225V±0.5V.

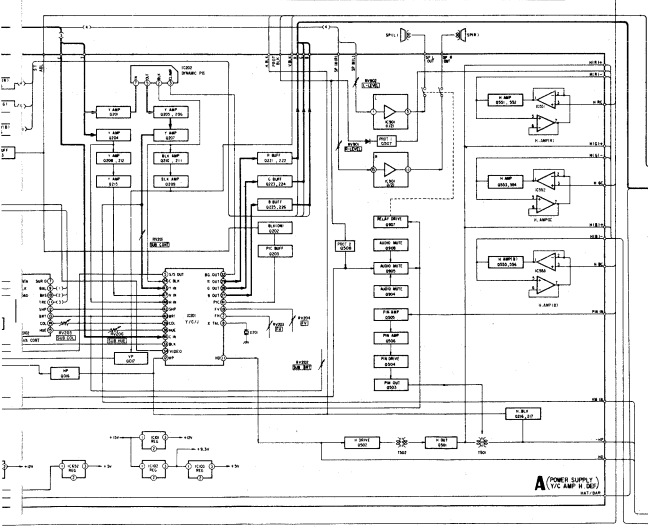
MEMO

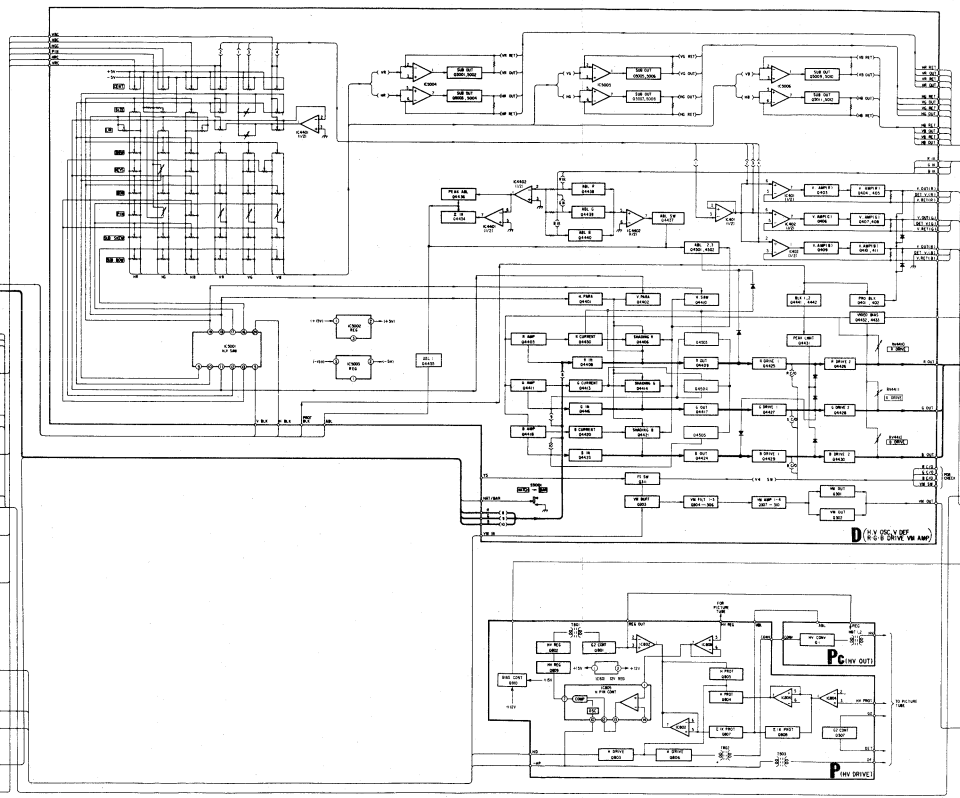
SECTION 6
DIAGRAMS

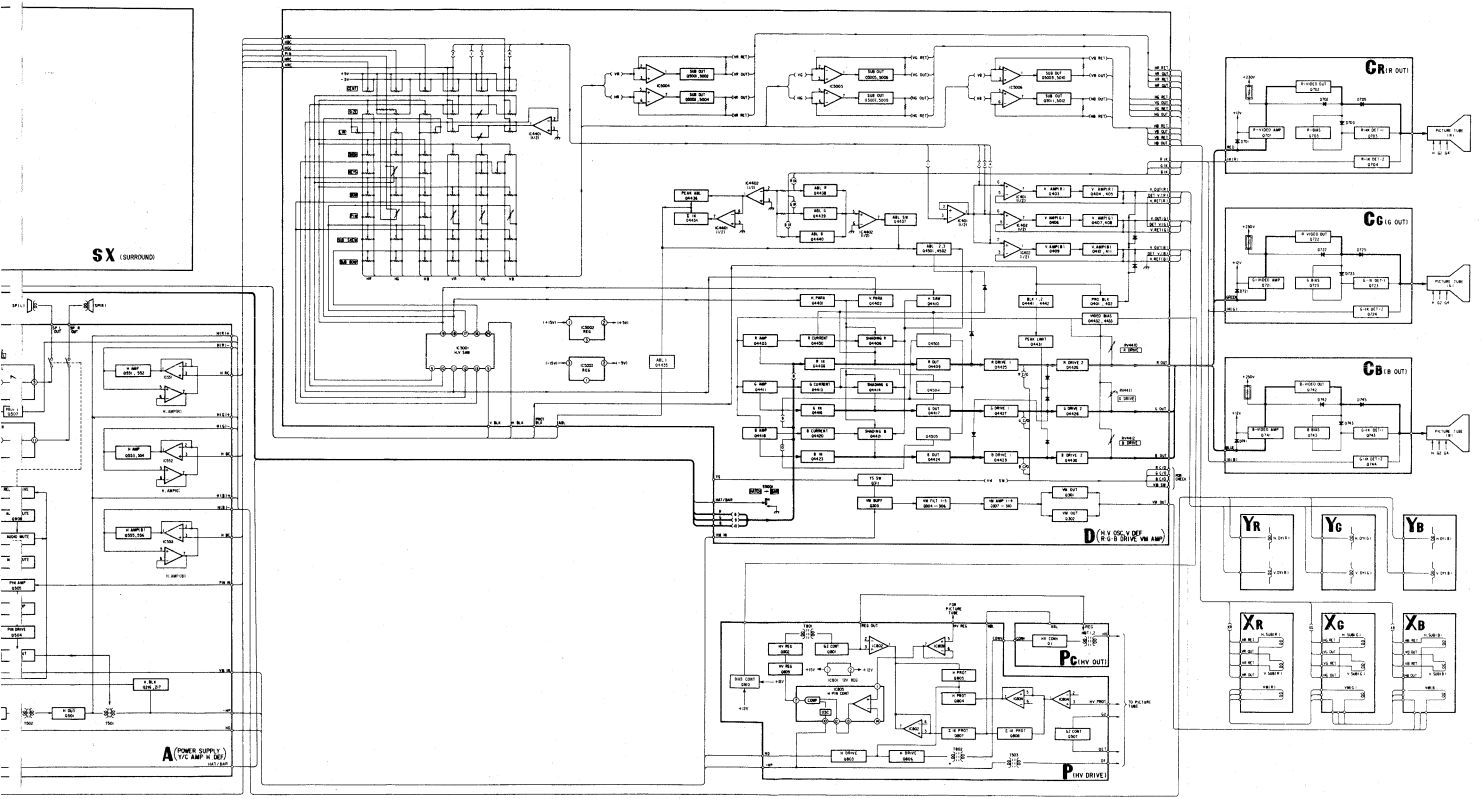
6-1. BLOCK DIAGRAM



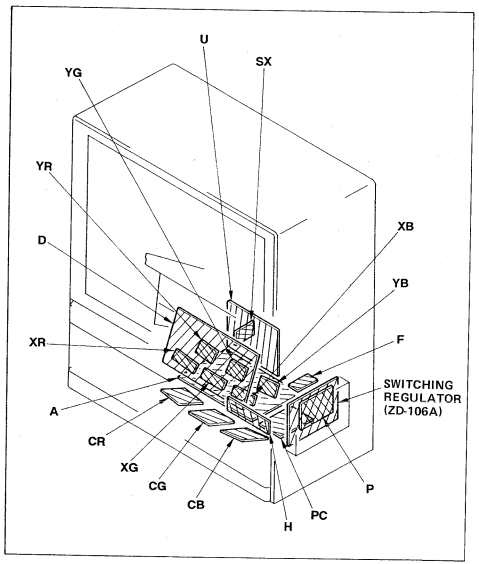

SX (SURROUND)


A (POWER SUPPLY / V/C AMP, H DRIVE)


D (H.V DEF, V DEF / R-G-B DRIVE, VM AMP)
PC (INV OUT)
P (INV DRIVE)


SX (SURROUND)
A (POWER SUPPLY / Y/C AMP / H DEF)
D (H.V. DEF / R G B DRIVE / VM AMP)
PC (HV OUT)
P (HV DRIVE)
CR (R OUT)
CG (G OUT)
CB (B OUT)
YR
YG
YB
XR
XG
XB

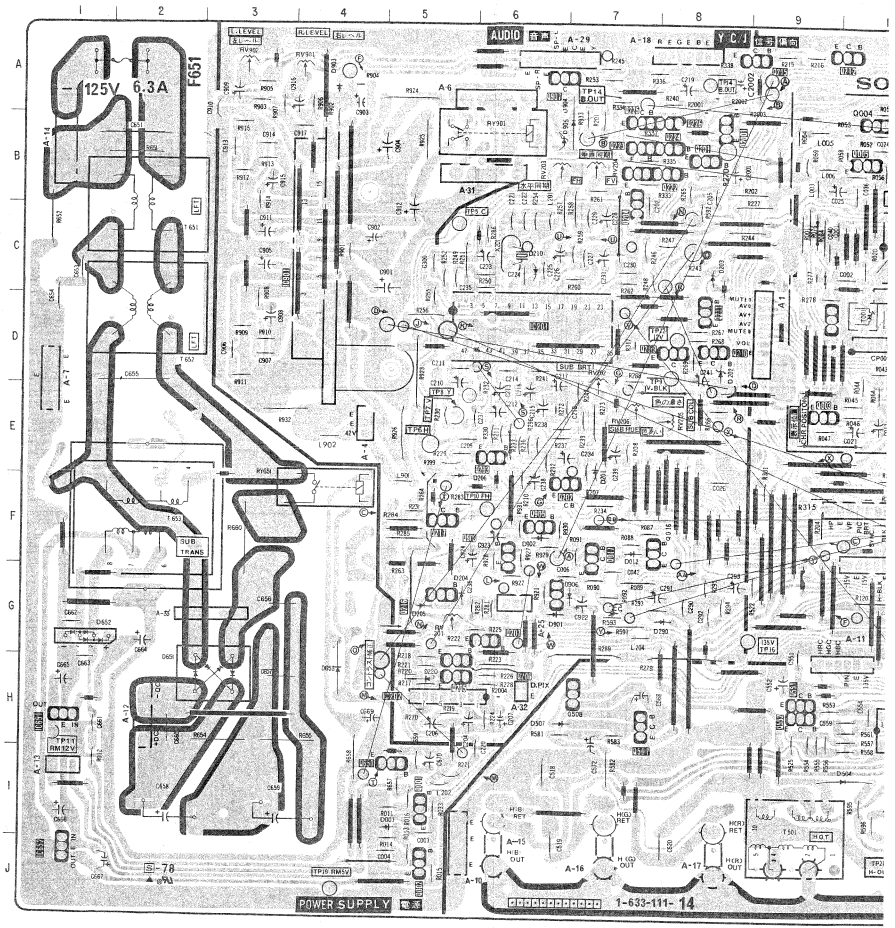
6-2. CIRCUIT BOARDS LOCATION



6-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

– A Board –

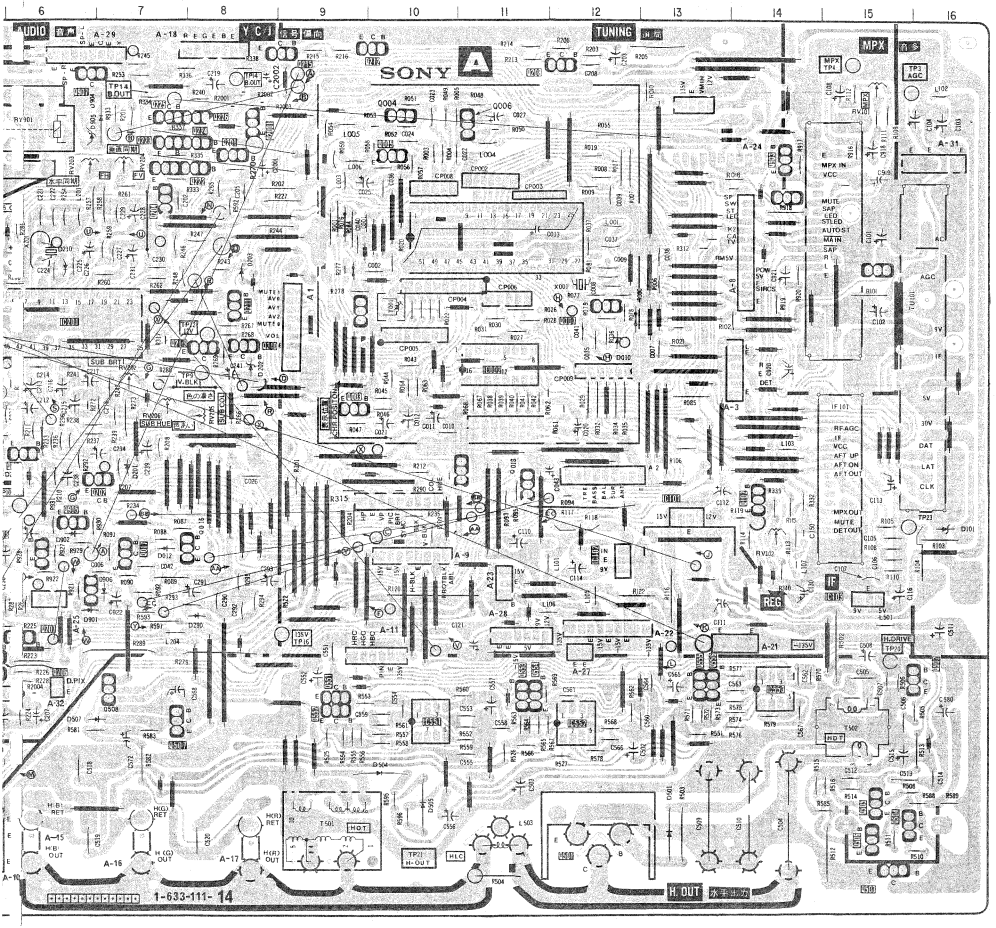
A LOCAL REG, Y/C/J
H DEF, TUNER
IF MRX, AUDIO OUT



KPR-53EX30
RM-Y109

KPR-53EX30
RM-Y109

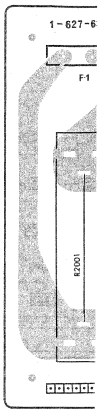
A LOCAL REG, Y/C/J
H DEF, TUNER
IF MRX, AUDIO OUT



IC		Q505	I-15	VARIABLE ERSISTOR	
IC001	C-11	Q506	J-15	RV101	A-15
IC002	Đ-11	Q507	H-7	RV102	F-14
IC101	F-13	Q508	H-7	RV201	G-5
IC102	F-12	Q551	H-9	RV202	Đ-7
IC103	G-15	Q552	H-9	RV203	B-6
IC201	Đ-6	Q553	H-11	RV204	B-7
IC202	H-5	Q554	H-11	RV205	E-8
IC551	H-10	Q555	H-13	RV206	E-7
IC552	H-12	Q556	H-13	RV901	A-4
IC553	H-14	Q651	I-5	RV902	A-3
IC651	H-1	Q903	B-14		
IC652	J-1	Q904	G-6		
IC901	C-4	Q905	F-6		
		Q907	A-6		
TRANSISTOR		Q908	F-6		
Q001	I-5				
Q002	J-5	ĐIOĐE			
Q003	E-9	Đ001	I-5		
Q004	B-10	Đ010	Đ-12		
Q005	B-10	Đ012	F-7		
Q006	B-11	Đ101	F-16		
Q007	F-7	Đ201	E-7		
Q016	F-8	Đ202	Đ-8		
Q017	F-7	Đ203	C-8		
Q018	F-11	Đ204	G-5		
Q101	C-15	Đ205	G-5		
Q102	F-14	Đ206	E-5		
Q201	B-8	Đ210	C-6		
Q202	F-7	Đ290	G-8		
Q203	E-6	Đ501	I-13		
Q204	B-7	Đ504	I-10		
Q205	H-5	Đ505	I-10		
Q206	H-6	Đ507	H-6		
Q207	G-6	Đ651	H-3		
Q208	A-12	Đ652	G-1		
Q209	Đ-8	Đ653	H-4		
Q210	Đ-8	Đ901	G-6		
Q211	Đ-8	Đ902	F-6		
Q212	A-10	Đ904	B-7		
Q215	A-9	Đ905	B-6		
Q216	G-5	Đ906	G-7		
Q217	F-5				
Q221	B-7				
Q222	B-8				
Q223	B-7				
Q224	B-8				
Q225	B-7				
Q226	B-8				
Q501	J-12				
Q502	H-16				
Q503	J-15				
Q504	I-15				

F AC NIRUSH RESISTOR

– F Board –



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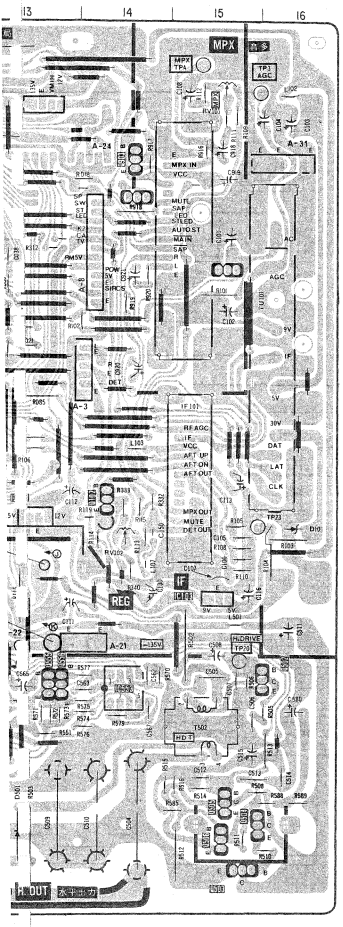
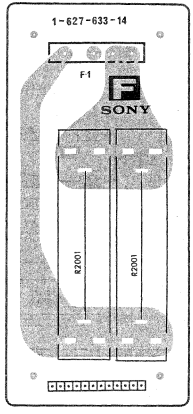


IC				VARIABLE RESISTOR	
IC001	C-11	Q505	I-15	RV101	A-15
IC002	D-11	Q506	J-15	RV102	F-14
IC101	F-13	Q507	H-7	RV201	G-5
IC102	F-12	Q508	H-7	RV202	D-7
IC103	G-15	Q551	H-9	RV203	B-6
IC201	D-6	Q552	H-9	RV204	B-7
IC202	H-5	Q553	H-11	RV205	E-8
IC551	H-10	Q554	H-11	RV206	E-7
IC552	H-12	Q555	H-13	RV901	A-4
IC553	H-14	Q556	H-13	RV902	A-3
IC651	H-1	Q651	I-5		
IC652	J-1	Q903	B-14		
IC901	C-4	Q904	G-6		
		Q905	F-6		
TRANSISTOR		Q907	A-6		
		Q908	F-6		
Q001	I-5	DIODE			
Q002	J-5	D001	I-5		
Q003	E-9	D010	D-12		
Q004	B-10	D012	F-7		
Q005	B-10	D101	F-16		
Q006	B-11	D201	E-7		
Q007	F-7	D202	D-8		
Q016	F-8	D203	C-8		
Q017	F-7	D204	G-5		
Q018	F-11	D205	G-5		
Q101	C-15	D206	E-5		
Q102	F-14	D210	C-6		
Q201	B-8	D290	G-8		
Q202	F-7	D501	I-13		
Q203	E-6	D504	I-10		
Q204	B-7	D505	I-10		
Q205	H-5	D507	H-6		
Q206	H-6	D651	H-3		
Q207	G-6	D652	G-1		
Q208	A-12	D653	H-4		
Q209	D-8	D901	G-6		
Q210	D-8	D902	F-6		
Q211	D-8	D904	B-7		
Q212	A-10	D905	B-6		
Q215	A-9	D906	G-7		
Q216	G-5				
Q217	F-5				
Q221	B-7				
Q222	B-8				
Q223	B-7				
Q224	B-8				
Q225	B-7				
Q226	B-8				
Q501	J-12				
Q502	H-16				
Q503	J-15				
Q504	I-15				

F [AC NIRUSH RESISTOR]

– F Board –



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power ¼ W

- All resistors are in ohms.
- : nonflammable resistor.
- : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⚠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⚠ and repeat the adjustment until the specified value is achieved. (Refer to R826, R827, R830, R831, and R852 on pages 31 – 33 in the Service Manual.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◪)		Adjustment (⚠)
HV BLOCK IC804, Q804, D806, D808, C819, R807, R829, R830, R831, R832, R833, R837, R838, R839, R840, R841	P board	HV HOLD DOWN ADJUSTMENT (R830, R831)
HV BLOCK IC803, IC805, D807, C818, R824, R825, R826, R827, R828, R834, R835, R836, R864, R865	P board	HV REGULATOR ADJUSTMENT (R826, R827)
IC802, IC804, Q804, Q805, Q807, Q808, D808, D809, D811, D812, D816, R807, R810, R839, R840, R841, R843, R844, R846, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857	P board	BEAM CURRENT PROTECTOR ADJUSTMENT (R852)
D633, R820, R690, R691, R692 (G board)		OVP CIRCUIT (R690, R691)

- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
  no mark : Normal
  ( ) : S signal
- Voltage variations may be noted due to normal production tolerances.
- : B + bus.
- : B – bus.
- : signal path.

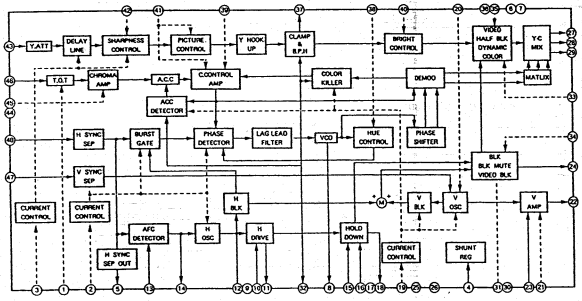
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

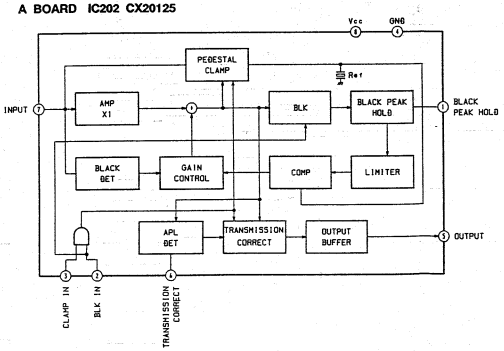
A BOARD WAVEFORMS

① 1.4Vp-p (H)	② 5.6Vp-p (H)	③ 1.6Vp-p (H)
④ 1.6Vp-p (H)	⑤ 2.0 Vp-p (H)	⑥ 1.4Vp-p (H)
⑦ 1.5Vp-p (H)	⑧ 5.2Vp-p (H)	⑨ 6.0Vp-p (H)
⑩ 4.0Vp-p (H)	⑪ 4.0Vp-p (H)	⑫ 4.7Vp-p (H)
⑬ 4.0Vp-p (H)	⑭ 180.0Vp-p (H)	⑮ 14.0Vp-p (H)
⑯ 800.0Vp-p (H)	⑰ 1.3Vp-p (H)	⑱ 8.0Vp-p (H)

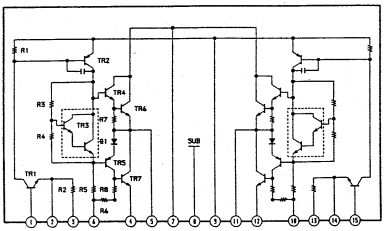
A BOARD IC201 CXA1012AS

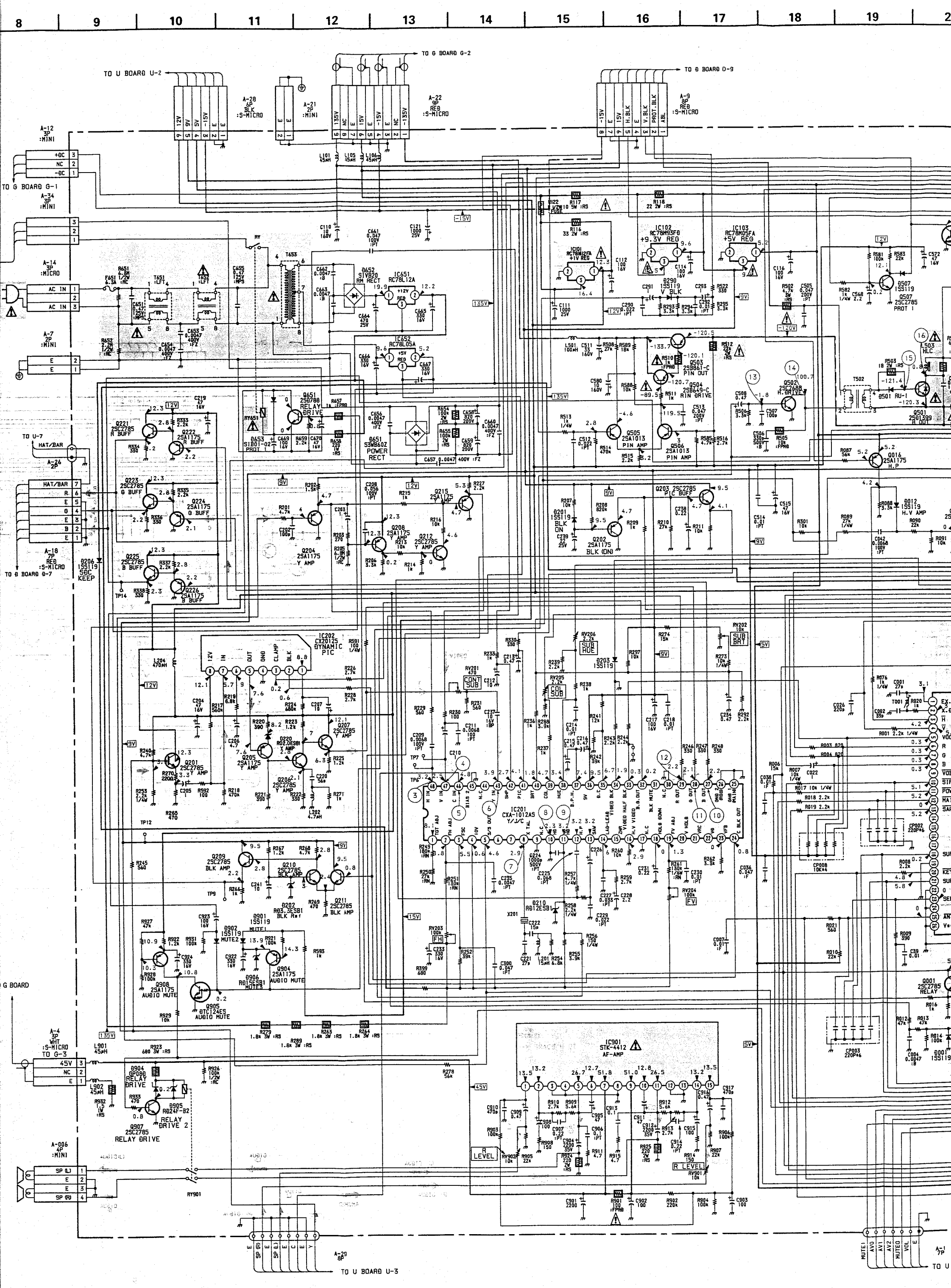


A BOARD IC202 CX20125



A BOARD IC901 STK4412





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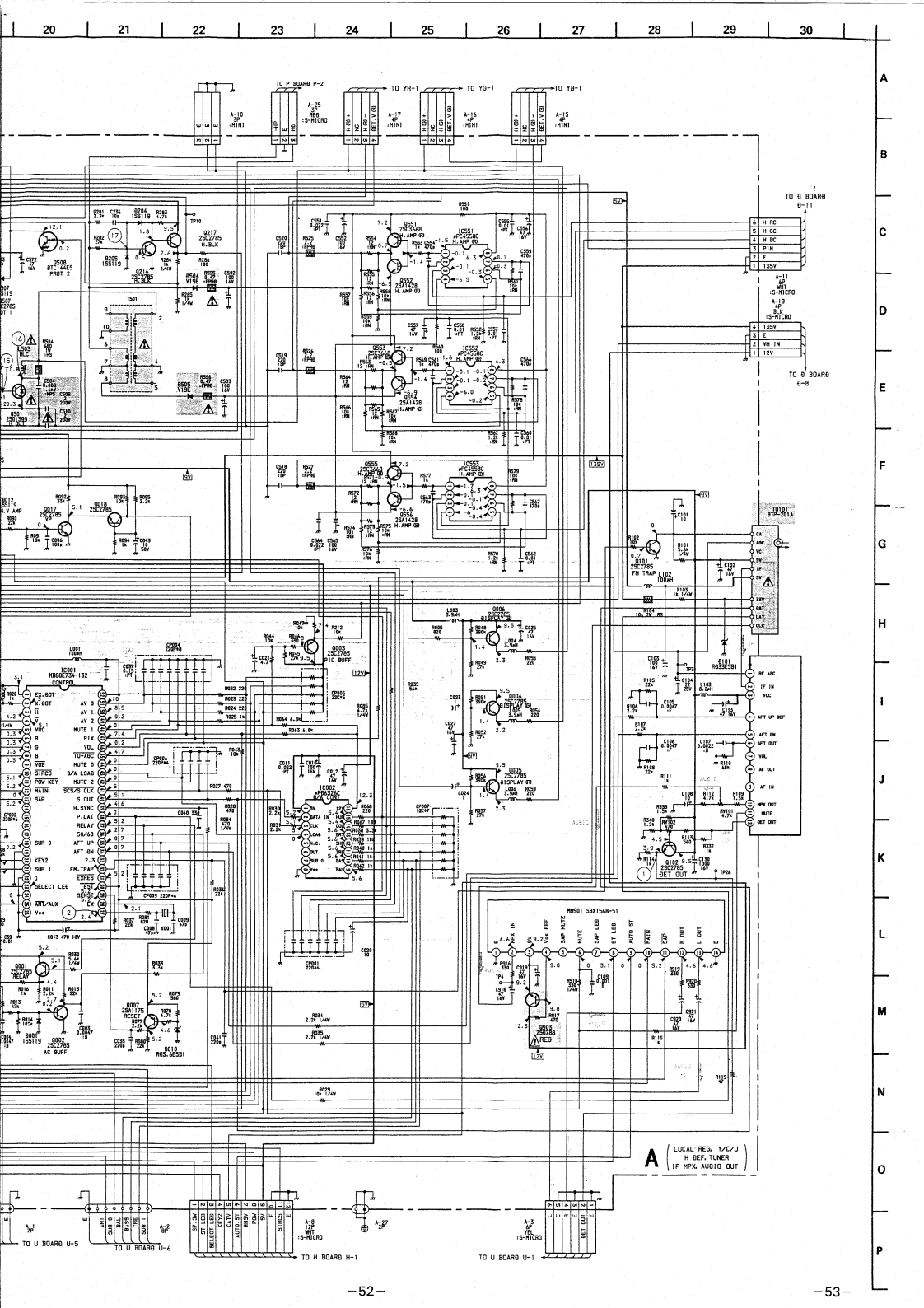
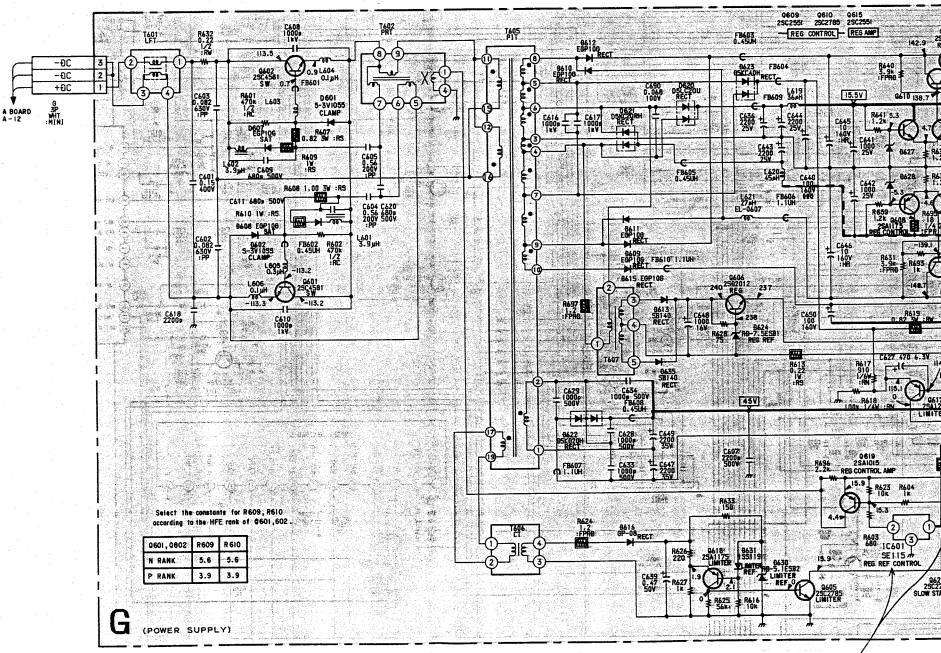
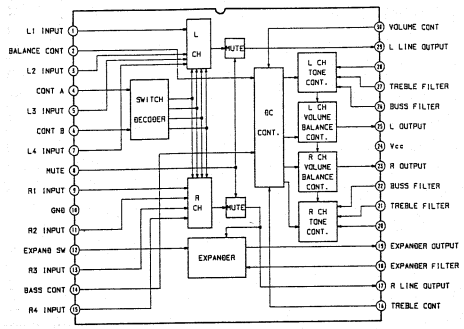
TO U BOARD U-2
A-28 6P BLK :S-MICRO
A-21 2P :MINI
TO G BOARD G-2
A-22 9P RED :S-MICRO
TO D BOARD D-9
A-9 8P RED :S-MICRO
A-12 3P :MINI
TO G BOARD G-1
A-34 3P :MINI
A-14 3P :MICRO
AC IN
A-7 2P :MINI
T653
D652 S1VB20 RM RECT
IC651 RC78L12A
IC652 RC78L05A
Q651 2SD788 RELAY DRIVE
D653 S1B01-02 PROT 1
D651 S3WB60Z POWER RECT
IC101 RC78M12FA +1V REG
IC102 RC78M93FD +9.3V REG
IC103 RC78M05FA +5V REG
D290 1SS119 V BLK
Q503 2SB861-C PIN OUT
Q504 2SB649-C RIN DRIVE
Q505 2SA1013 PIN AMP
Q506 2SA1013 PIN AMP
Q502 2SC2688 H.DRIVE
T502
Q501 2SD1399 H OUT
D501 RU-1
L503 HLC
Q507 2SC2785 PROT 1
Q016 2SA1175 H.P
D012 1SS119 H.V AMP
TO U-7
HAT/BAR
A-26 2P
A-18 7P RED :S-MICRO
TO D BOARD D-7
Q221 2SC2785 R BUFF
Q222 2SA1175 R BUFF
Q223 2SC2785 G BUFF
Q224 2SA1175 G BUFF
Q225 2SC2785 B BUFF
Q226 2SA1175 B BUFF
D206 1SS119 SDC KEEP
Q204 2SA1175 Y AMP
Q208 2SA1175 Y AMP
Q212 2SC2785 Y AMP
Q215 2SA1175 Y AMP
Q203 2SC2785 PIC BUFF
Q202 2SA1175 BLK (ON)
D201 1SS119 BLK ON
IC202 CX20125 DYNAMIC PIC
Q201 2SC2785 Y AMP
Q205 2SA1175 Y AMP
Q206 2SC2785 Y AMP
Q207 2SC2785 Y AMP
D220 RD2.0ESB1 Y AMP
CONT SUB
COL SUB
SUB HUE
SUB BRT
D203 1SS119
IC201 CXA-1012AS Y/J/C
Q209 2SC2785 BLK AMP
Q210 2SC2785 BLK AMP
Q211 2SC2785 BLK AMP
D202 RD3.3ESB1 BLK Rm1
D901 1SS119 MUTE1
D902 1SS119 MUTE2
Q904 2SA1175 AUDIO MUTE
D906 RD15ESB1 MUTE3
Q908 2SA1175 AUDIO MUTE
Q905 DTC124ES AUDIO MUTE
FH
FV
D210 RD12ESB1
X201
Q001 2SC2785 RELAY
CP002 220P*6
CP008 10K*4
CP003 220P*6
TO G BOARD
A-4 3P WHT :S-MICRO TO G-3
D904 GP08D RELAY DRIVE
D905 RD24F-B2 RELAY DRIVE 2
Q907 2SC2785 RELAY DRIVE
A-006 4P :MINI
RY901
IC901 STK-4412 AF-AMP
R LEVEL
A-29 8P
TO U BOARD U-3
A-1 7P
TO U

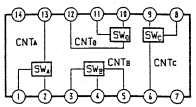

TO P BOARD P-2
TO YR-1
TO YG-1
TO YB-1
TO B BOARD B-11
TO B BOARD B-8
TO U BOARD U-5
TO U BOARD U-6
TO H BOARD H-1
TO U BOARD U-1
IC001 M38867M4-132 CONTROL
IC002 APC455BC H.AMP (R)
IC003 APC455BC H.AMP (G)
IC004 APC455BC H.AMP (B)
IC005 APC455BC H.AMP (B)
IC006 APC455BC H.AMP (B)
IC007 APC455BC H.AMP (B)
Q006 2SC2785 R.SPCFLY (B)
Q007 2SA1175 RESET
Q008 DTC144ES PROT 2
Q009 2SC2785 RELAY
Q010 RK5.4ESB1
Q011 2SA1175 RESET
Q012 2SC2785 AC BUFF
Q013 2SC2785 H.BLK
Q014 2SC2785 H.OUT
Q015 2SC2785 H.V AMP
Q016 2SC2785 PIC BUFF
Q017 2SC2785 H.V AMP
Q018 2SC2785
Q019 2SC2785 FM TRAP L102 100mH
Q020 2SC2785 BET OUT
Q021 2SC2785 REG
Q022 2SC2785 REG
TU101 BTP-201A
MM901 SBX1568-51
A LOCAL REG. Y/C/J H DEF. TUNER IF MPX. AUDIO OUT
SELECT LED
ST LED
KEY2
KEY1
AUTO ST
RDSV
FSW
SIRCS
ANT/AUX
SUR 0
BAL
TREB
SUR 1
MAIN
SAP
MUTE
ST LED
AUTO ST
R OUT
L OUT
BET OUT
AFT IN
MPX OUT
AF OUT
VOL
AFT OUT
IF VCC
RF AGC

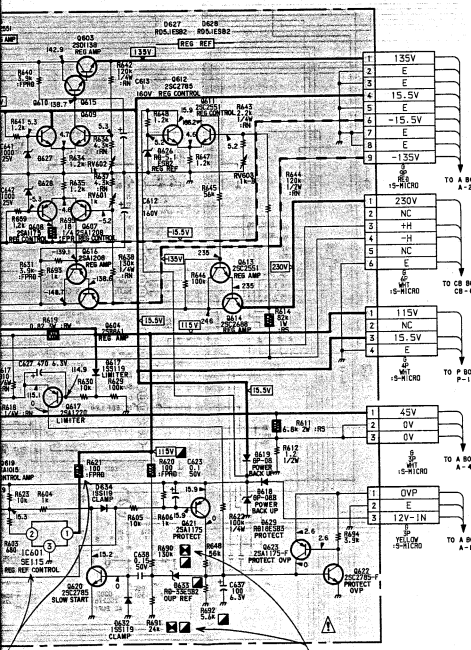

-DC
-DC
+DC
TO A BOARD
A-12
G
(POWER SUPPLY)
Select the constants for R609, R610 according to the HFE rank of Q601, Q602.
Q601, Q602 | R609 | R610
N RANK | 5.6 | 5.6
P RANK | 3.9 | 3.9
CAUTION
When replacing IC801 and R821, be sure to check
B+ MAX check point voltage value.
Refer to the Safety Adjustment Section.

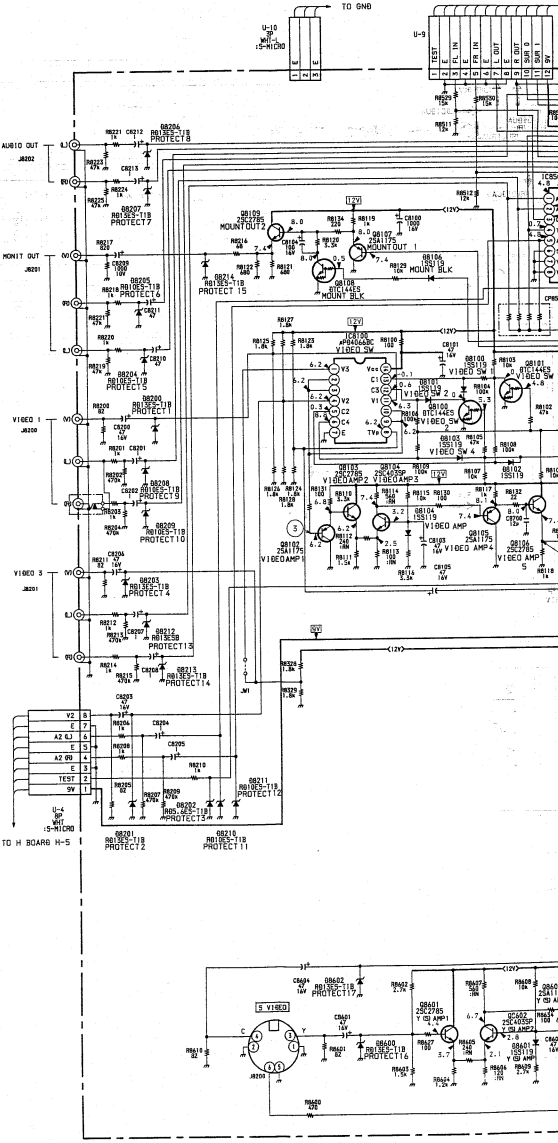
U BOARD IC8500 LA7953



U BOARD IC8600 UPD4066BC





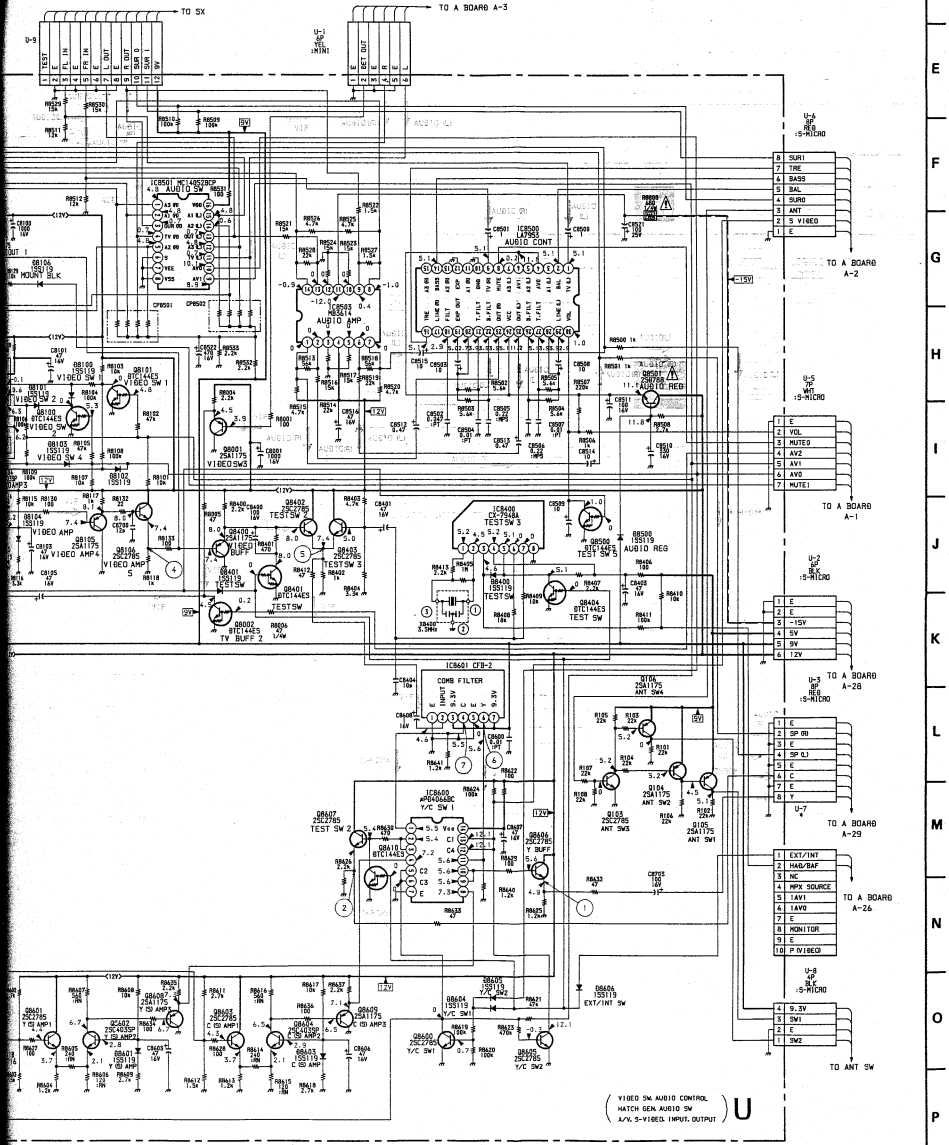


: See Page 32

be sure to check the
ction.

U BOARD WAVEFORMS

① 2.4 Vp-p (H)	② 2.4Vp-p (H)	③ 1.2Vp-p (H)
④ 2.4 Vp-p (H)	⑤ 2.4 Vp-p (H)	⑥ 2.4Vp-p (H)
⑦ 2.4Vp-p (H)		



U VIDEO SW, AUDIO CONTROL
HATCH GEN, AUDIO SW
A/V, S-VIDEO, INPUT, OUTPUT

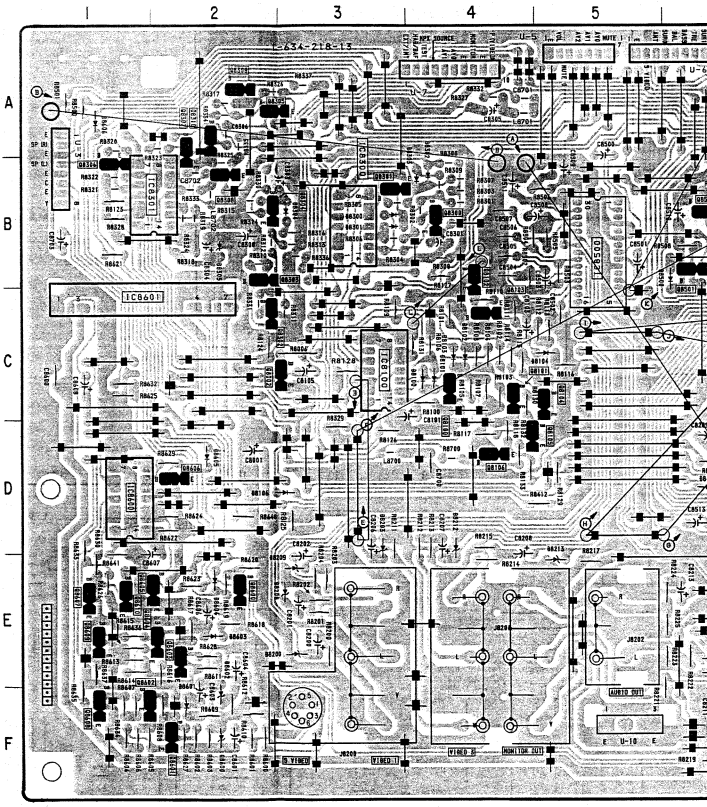
– U Board –

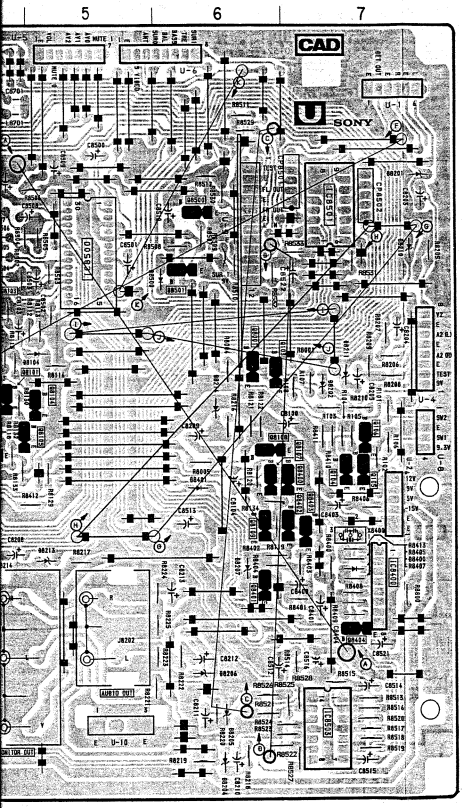
U BOARD

IC	
IC8100	C-3
IC8400	E-7
IC8500	B-5
IC8501	B-7
IC8503	F-7
IC8600	D-1
IC8601	C-1

TRANSISTOR	
Q103	C-6
Q104	D-7
Q105	D-7
Q106	D-7
Q8001	C-6
Q8002	C-3
Q8100	C-4
Q8101	C-4
Q8102	B-4
Q8103	C-4
Q8104	C-5
Q8105	D-4
Q8106	D-4
Q8107	D-6
Q8108	D-6
Q8109	D-6
Q8400	D-7
Q8401	E-6
Q8402	D-7
Q8403	D-7
Q8404	E-7
Q8500	B-6
Q8501	B-6
Q8600	E-2
Q8601	F-2
Q8602	F-1
Q8603	E-2
Q8604	E-2
Q8605	E-1
Q8606	D-2
Q8607	E-1
Q8608	F-1
Q8609	E-1
Q8610	E-1

DIODE	
D8100	C-4
D8101	C-4
D8102	C-4
D8103	C-4
D8104	C-5
D8106	D-3
D8200	E-3
D8201	B-7
D8202	C-7
D8203	D-3
D8204	F-6
D8205	F-6
D8206	E-6
D8207	E-6
D8208	E-3
D8209	E-3
D8210	B-8
D8211	C-7
D8212	D-4
D8213	E-5
D8214	C-6
D8400	E-7
D8401	D-6
D8500	B-6
D8600	F-2
D8601	F-2
D8602	E-2
D8603	E-2
D8604	E-2
D8605	D-2
D8606	A-1





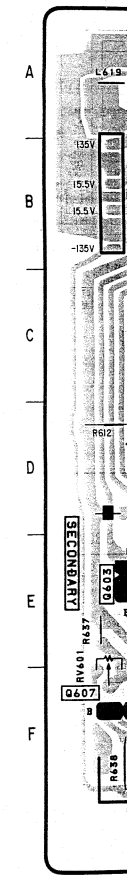
GBOARD

IC	
IC601	C-5

TRANSISTOR	
Q601	D-6
Q602	E-5
Q603	D-1
Q604	E-1
Q605	C-4
Q606	B-6
Q607	D-1
Q608	E-1
Q609	D-1
Q610	D-2
Q611	A-5
Q612	A-5
Q613	A-6
Q614	A-6
Q615	D-1
Q616	E-2
Q617	B-4
Q618	C-4
Q619	C-4
Q620	B-5
Q621	B-5
Q622	B-5
Q623	B-5

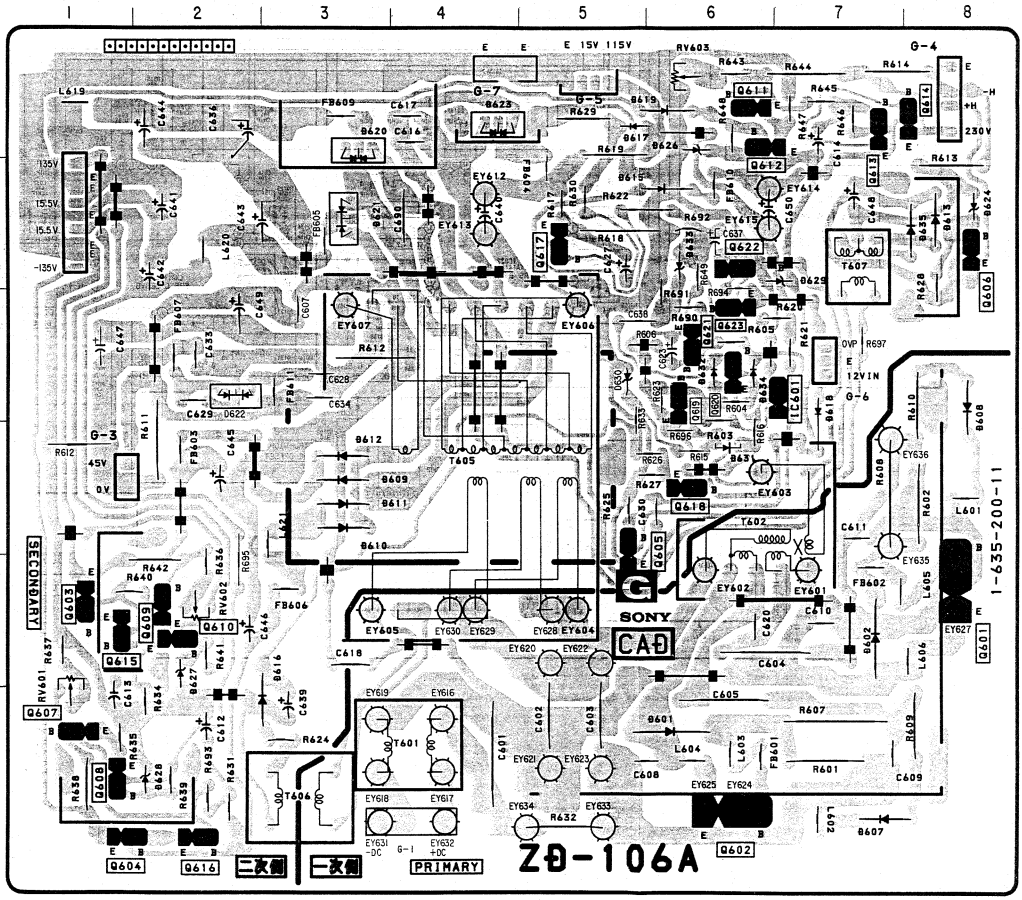
DIODE	
D601	E-4
D602	D-6
D607	E-6
D608	C-6
D609	C-2
D610	C-2
D611	C-2
D612	C-2
D613	B-6
D615	A-4
D616	D-2
D617	A-4
D618	C-5
D619	A-4
D620	A-3
D621	B-3
D622	C-2
D623	A-3
D624	B-6
D626	A-5
D627	D-1
D628	E-1
D629	B-5
D630	B-4
D631	C-5
D632	B-5
D633	B-4
D634	B-5
D635	B-6

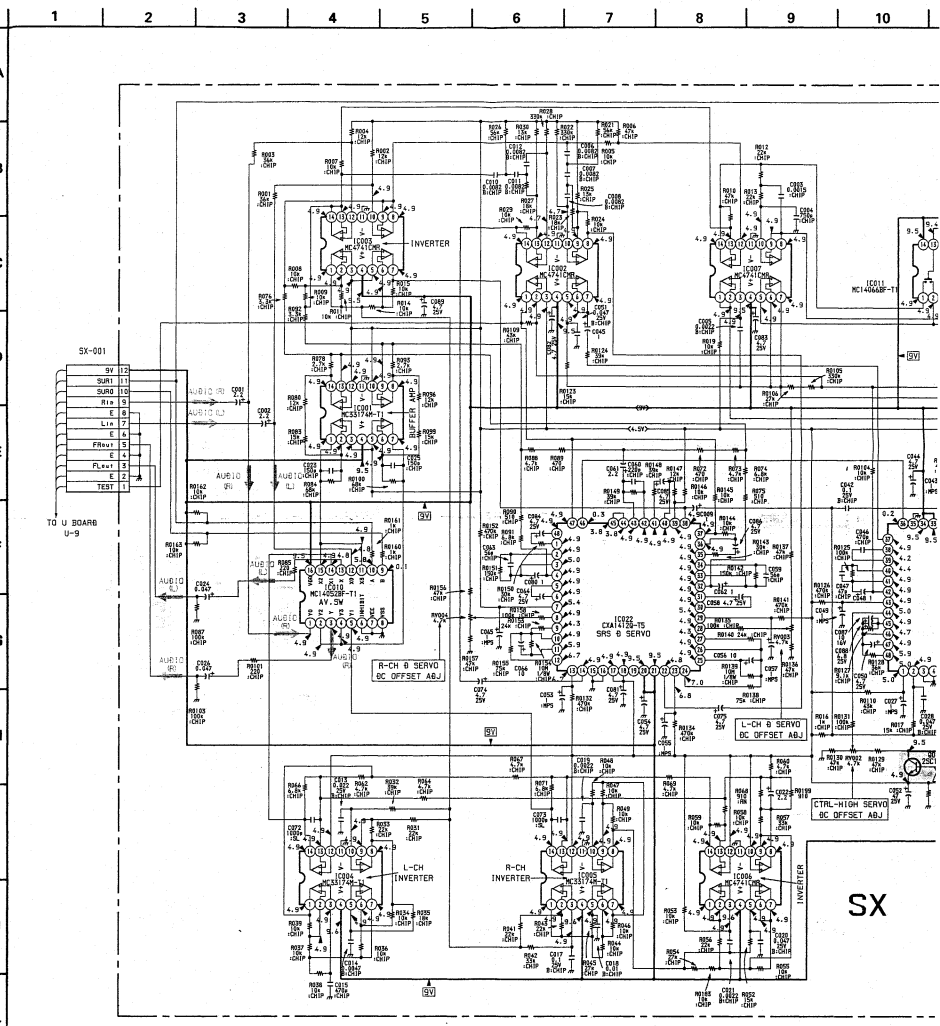
VARIABLE TRANSISTOR	
RV601	D-1
RV602	D-2
RV603	A-4

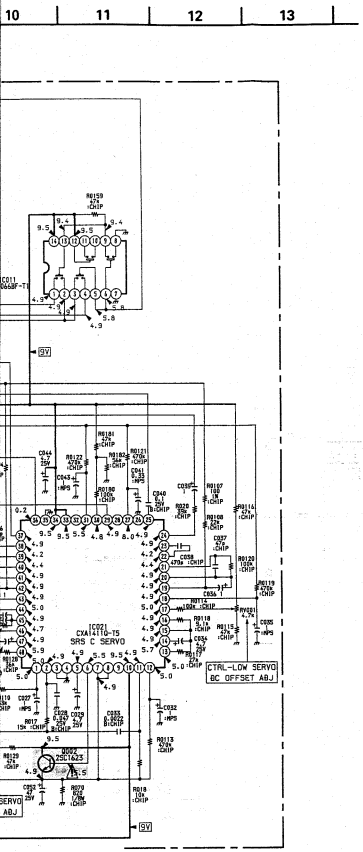


G [POWER SUPPLY]

– G Board –




SX-001
SV 12
SUR1 11
SUR0 10
Rin 9
E 8
Lin 7
E 6
FRout 5
E 4
FLout 3
E 2
TEST 1
TO U BOARD U-9
AUDIO (R)
AUDIO (L)
INVERTER
BUFFER AMP
R-CH & SERVO DC OFFSET ADJ
L-CH & SERVO DC OFFSET ADJ
CTRL-HIGH SERVO DC OFFSET ADJ
L-CH INVERTER
R-CH INVERTER
SX



SX

ÐBOARÐ

IC					
IC401	B-15	Q4425	E-3	Q4404	D-4
IC402	G-15	Q4426	E-3	Q4405	D-3
IC4401	F-10	Q4427	E-3	Q4406	D-2
IC4402	F-9	Q4428	E-3	Q4407	D-4
ICS001	F-12	Q4429	E-2	Q4408	D-4
ICS002	C-11	Q4430	E-2	Q4409	G-10
ICS004	B-11	Q4431	D-4	Q4410	G-11
ICS005	B-6	Q4432	D-4	Q4411	F-11
ICS006	B-8	Q4433	D-4	Q4412	F-11
		Q4434A	D-11	Q4413	E-2
		Q4435	G-11	Q4414	E-2
		Q4436	F-11	Q4417	E-5
		Q4437	F-11	Q4418	G-9
		Q4438	F-11	Q4428	E-2
		Q4439	F-8	Q4429	E-4
		Q4440	F-8		
TRANSISTOR		Q4441	G-7	VARIABLE RESISTOR	
Q301	B-2	Q4442	F-7	RV4407	B-5
Q302	C-2	Q4450	F-2	RV4408	E-5
Q303	B-4	Q4501	E-3	RV4409	E-5
Q304	B-4	Q4502	E-3	RV4410	B-5
Q305	B-4	Q4503	F-2	RV4411	E-5
Q306	B-4	Q4504	G-4	RV4412	E-5
Q307	C-3	Q4505	G-4	RV4501	E-4
Q308	C-3	Q5001	A-14	RV5001	D-10
Q309	B-3	Q5002	A-14	RV5002	E-10
Q310	C-3	Q5003	A-13	RV5003	E-10
Q311	B-4	Q5004	A-12	RV5004	B-10
Q312	A-3	Q5005	A-8	RV5005	C-10
Q313	A-3	Q5006	A-8	RV5006	D-10
Q401	C-15	Q5007	A-7	RV5007	D-10
Q402	C-15	Q5008	A-6	RV5008	E-10
Q403	B-15	Q5009	A-12	RV5009	E-10
Q404	B-16	Q5010	A-11	RV5010	B-10
Q405	B-16	Q5011	A-10	RV5011	C-10
Q406	F-15	Q5012	A-9	RV5012	D-10
Q407	C-16			RV5013	D-9
Q708	B-16	DIODE		RV5014	E-9
Q409	G-16	D301	B-2	RV5015	E-9
Q410	E-16	D302	C-2	RV5016	B-9
Q411	E-16	D303	B-3	RV5017	C-9
Q4401	F-7	D304	C-2	RV5018	D-9
Q4402	F-6	D305	B-13	RV5019	D-9
Q4403	G-2	D306	C-4	RV5020	E-9
Q4406	F-2	D307	C-4	RV5021	E-9
Q4408	G-1	D308	C-4	RV5022	B-9
Q4409	F-1	D401	C-15	RV5023	C-9
Q4410	G-6	D402	C-15	RV5024	D-9
Q4411	G-3	D403	C-15	RV5025	D-8
Q4413	F-3	D404	C-15	RV5026	E-8
Q4414	F-4	D405	B-15	RV5027	E-8
Q4416	G-3	D406	C-16	RV5028	D-8
Q4417	F-3	D407	D-15	RV5029	D-8
Q4418	G-4	D408	F-16	RV5030	D-8
Q4420	F-4				
Q4421	F-5				
Q4423	G-4				
Q4424	F-5				

5031	E-8		
5032	E-8		
5033	B-8		
5034	C-8		
5035	B-8		
5036	B-7		
5037	E-7		
5038	E-7		
5039	B-7		
5040	C-7		
5041	D-7		
5042	D-7		
5043	E-7		
5044	E-7		
5045	B-7		
5046	C-7		
5047	D-7		
5048	D-6		
5049	E-6		
5050	E-6		
5051	B-6		
5052	C-6		
5053	D-6		
5058	C-8		

SX D REGISTRATION GEN, SHADING CORR R.G. H/V SUB OUT, VM R

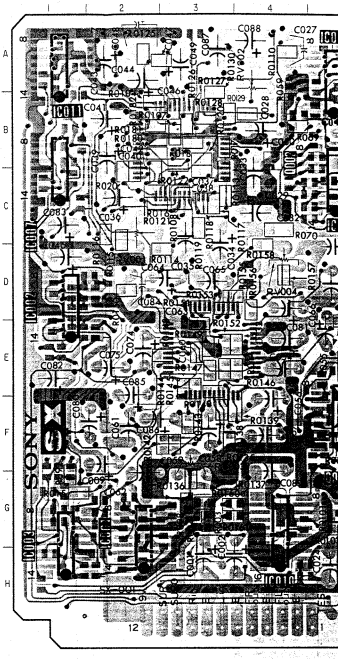
– SX Board –

SXBOARÐ

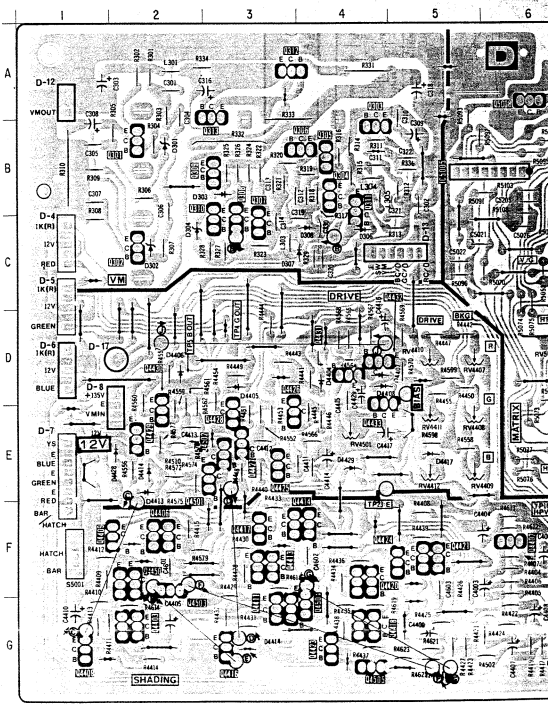
IC	
IC001	G-2
IC002	D-1
IC003	G-1
IC004	F-5
IC005	C-5
IC006	A-5
IC007	C-1
IC010	G-4
IC011	A-1
IC021	B-9
IC022	E-9

TRANSISTOR	
Q002	B-4

VARIABLE RESISTOR	
RV001	C-2
RV002	A-4
RV003	F-3
RV004	D-4

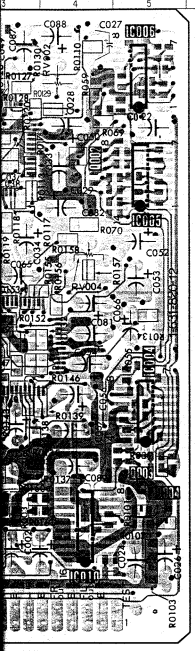


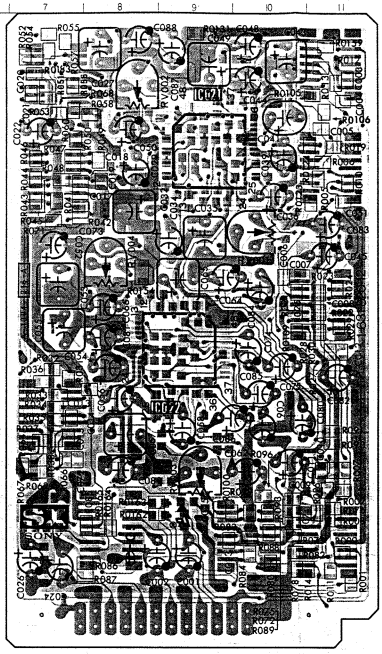
– D Board –

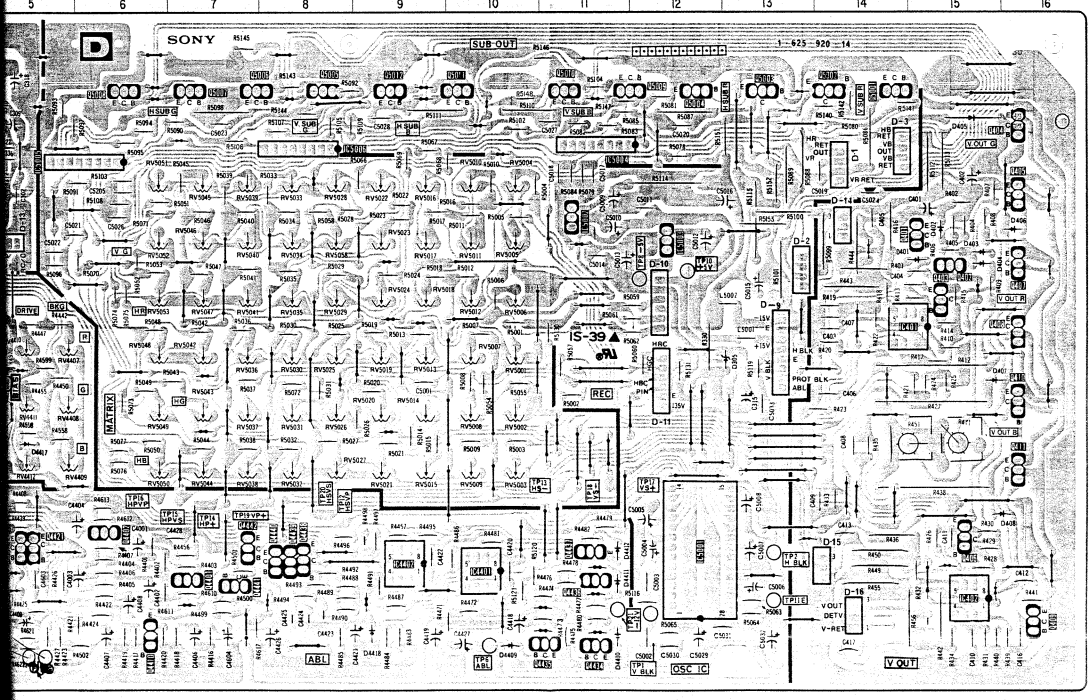


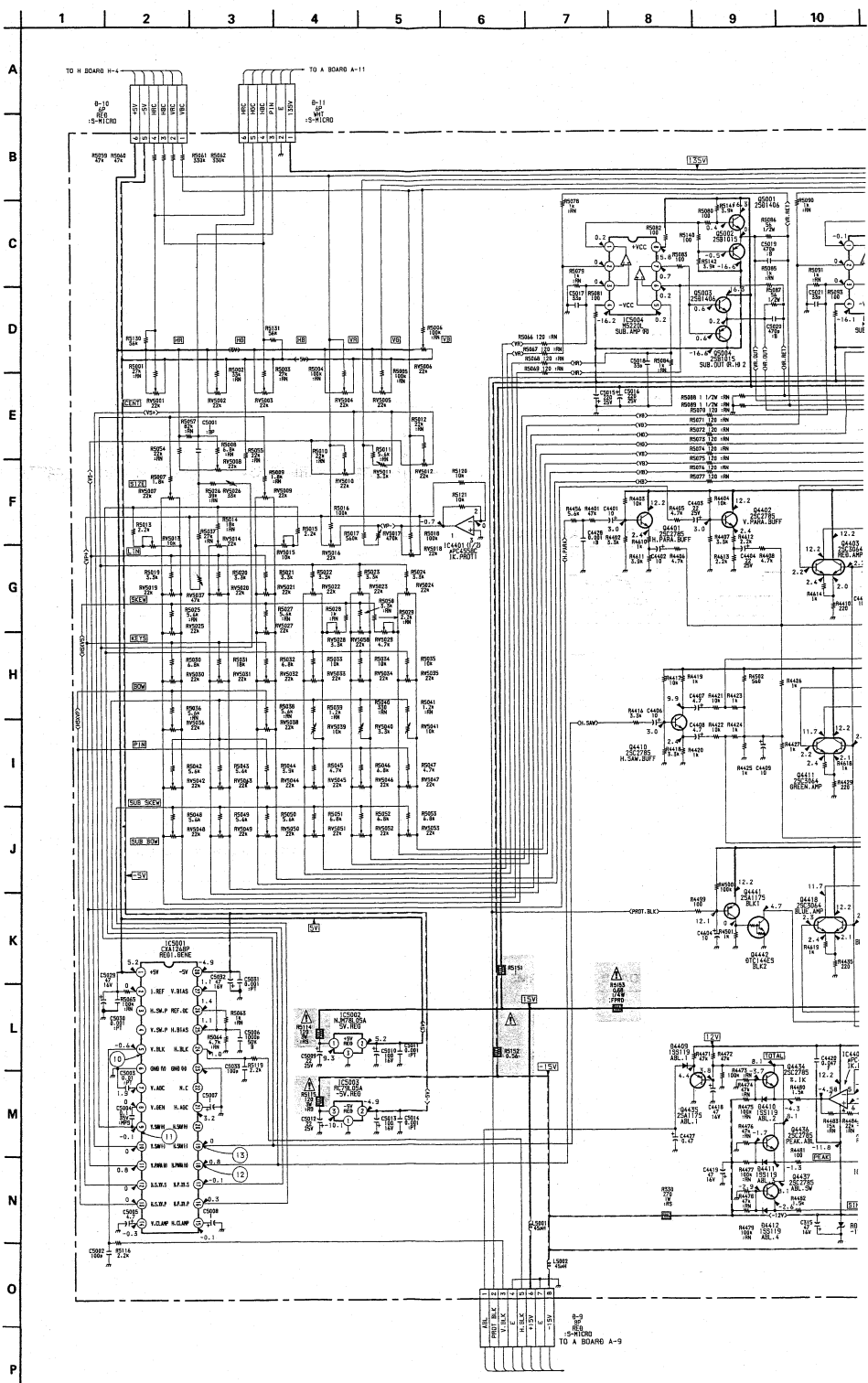
D

REGISTRATION GEN, ABL VIDEO DRIVE
SHADING CORR R.G.B V.OUT
H/V SUB OUT, VM REGISTRATION MATRIX





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A
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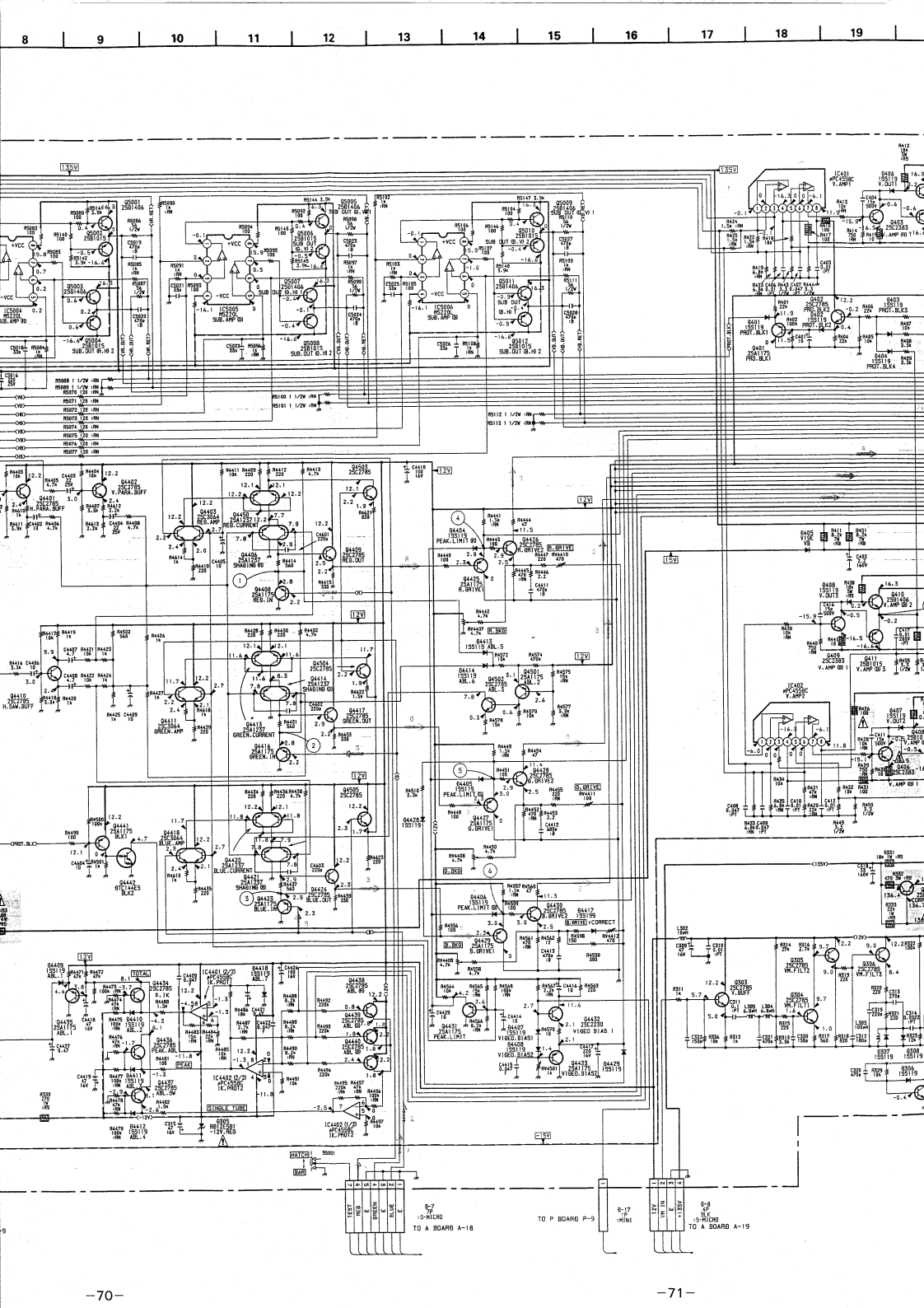
N
O
P
TO H BOARD H-4
TO A BOARD A-11
B-10 CP REG :S-MICRO
B-11 CP VHT :S-MICRO
+5V
-5V
HDC
HDC
PIN
SCC
VDC
HR
HB
VR
VB
CENT
SIZE
LIN
SKEW
KEYS
BOW
PIN
SUB SKEW
SUB BOW
+13SV
+5V
-5V
+12V
-12V
-15V
IC5001 CXA1268P REGI.SENE
IC5002 NJM78L05A
IC5003 RC79L05A
IC4401 (2/2) μPC4558C/G2 IK.PROT
Q5001 2SB1408
Q5002 2SB1015
Q5003 2SB1408
Q5004 2SB1015
LC5004 M52743 SUB.AMP/RG
SUB.OUT 86.10.2
Q4401 2SC2785 H. PARA.BUFF
Q4402 2SC2785 V.PARA.BUFF
Q4403 2SC3664 RED.AMP
Q4404 2SC3664 GREEN.AMP
Q4405 2SC3664 BLUE.AMP
Q4406 2SC2785 H.SAW.BUFF
Q4407 2SC2785 PROT.BLK
Q4408 DTC144ES BLK2
Q4409 2SB1219 ABL.1
Q4410 2SA1175 ABL.1
Q4411 2SB1219 ABL.2
Q4412 2SA1175 ABL.2
Q4413 2SB1219 ABL.3
Q4414 2SA1175 ABL.3
Q4415 2SB1219 ABL.4
Q4416 2SA1175 ABL.4
Q4417 2SC2785 ABL.SW
Q4418 2SC2785 PEAK.ABL
Q4434 2SC2785 TOTAL
Q4435 2SA1175
Q4436 2SC2785 PEAK.ABL
Q4437 2SC2785 ABL.SW
PEAK
TOTAL
R5153 0.68 2W FUSE
R5154 0.68 2W FUSE
R5155 0.68 2W FUSE
R5156 0.68 2W FUSE
L5001 47uH
L5002 47uH
L5003 47uH
B-9 DEF HEIG :S-MICRO
TO A BOARD A-9
-69-
-70-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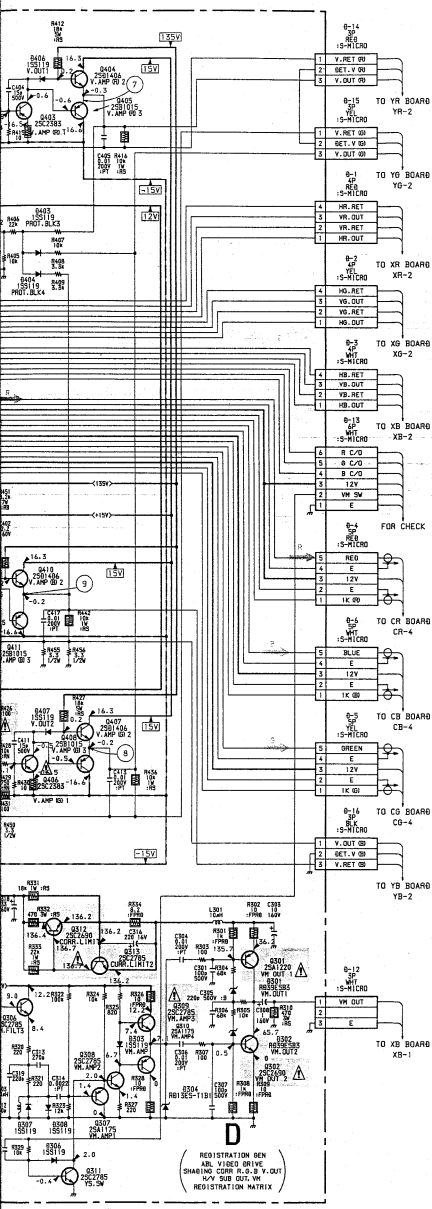
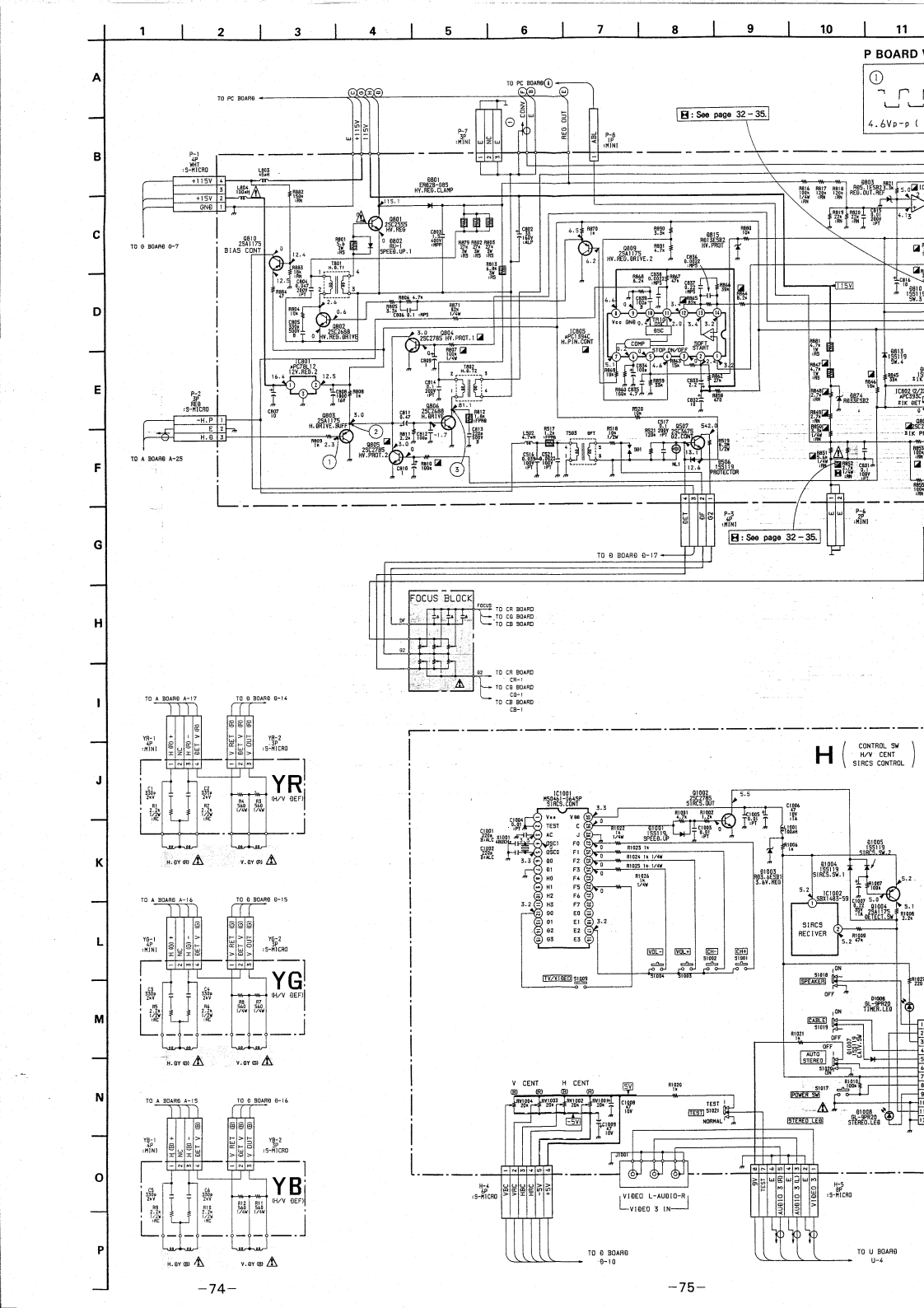
TO A BOARD A-18
TO P BOARD P-9
TO A BOARD A-19



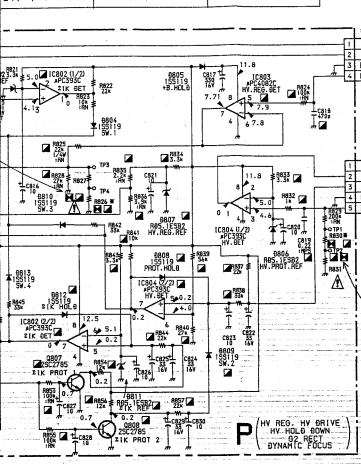
D BOARD WAVEFORMS

① 4.0Vp-p (H)	② 4.2Vp-p (H)	③ 4.2Vp-p (H)
④ 4.4Vp-p (H)	⑤ 4.0 Vp-p (H)	⑥ 4.0Vp-p (H)
⑦ 100.0Vp-p (V)	⑧ 100.0Vp-p (V)	⑨ 100.0Vp-p (V)
⑩ 6.8Vp-p (V)	⑪ 2.4Vp-p (V)	⑫ 2.8Vp-p (H)
⑬ 2.3Vp-p (H)		


P BOARD
TO PC BOARD
TO Q BOARD Q-7
TO A BOARD A-25
TO Q BOARD Q-17
: See page 32 – 35.
FOCUS BLOCK
TO CR BOARD
TO CG BOARD
TO CB BOARD
TO A BOARD A-17
TO Q BOARD Q-14
YR
(H/V DEF)
TO A BOARD A-16
TO Q BOARD Q-15
YG
(H/V DEF)
TO A BOARD A-15
TO Q BOARD Q-16
YB
(H/V DEF)
H
CONTROL SW
H/V CENT
SIRCS CONTROL
SIRCS RECIVER
SPEAKER
CABLE
AUTO STEREO
POWER SW
STEREO LED
V CENT
H CENT
TEST
NORMAL
VIDEO L-AUDIO-R
VIDEO 3 IN
TO Q BOARD Q-10
TO U BOARD U-4

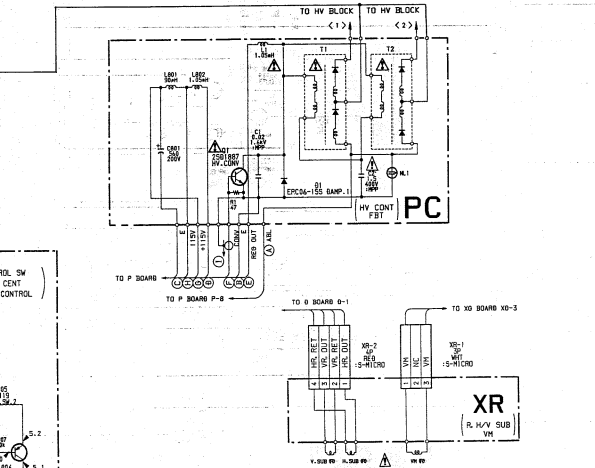
BOARD WAVEFORMS

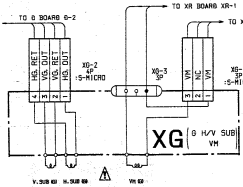
①	②	③
6Vp-p (H)	4.6Vp-p (H)	144Vp-p (H)

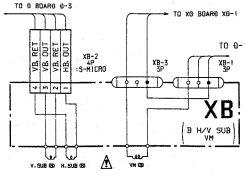


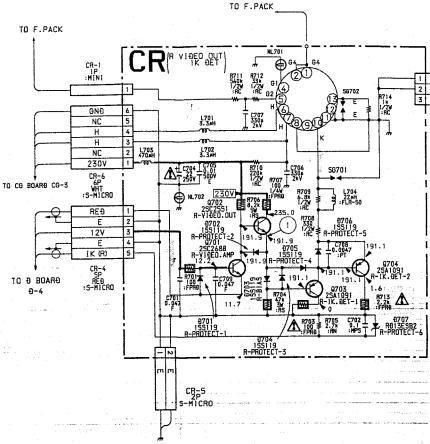
PC BOARD WAVEFORMS

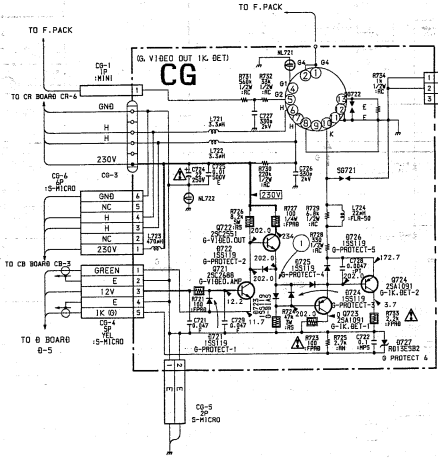
①	②
12.0Vp-p (H)	900.0Vp-p (H)

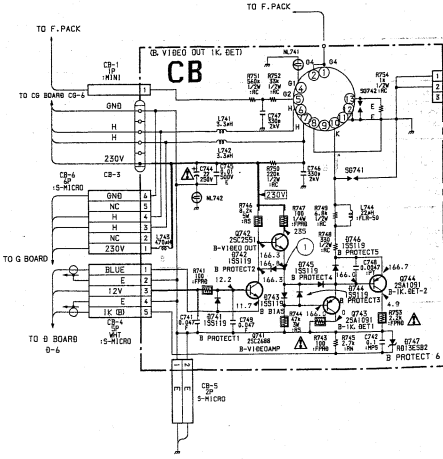






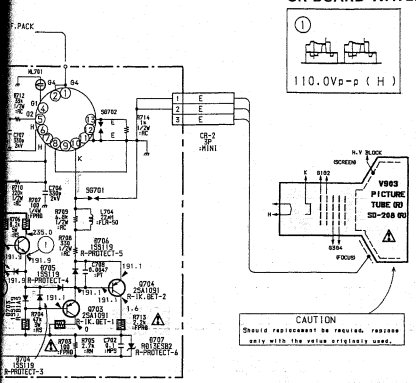






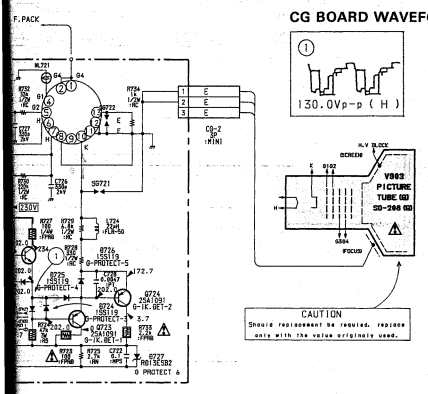
P [HV REG, HV DRIVE / HV HOLD DOWN G2 RECT / DYNAMIC FOCUS] Pc [HV CONT FBT]

CR BOARD WAVEFORMS



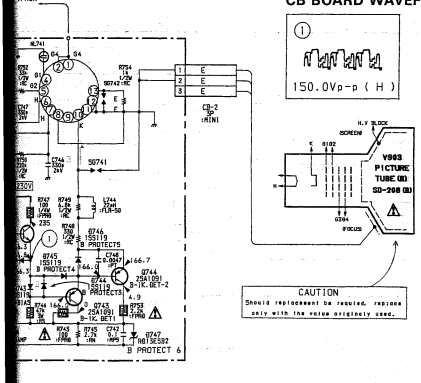
① 110.0Vp-p (H)

CG BOARD WAVEFORMS



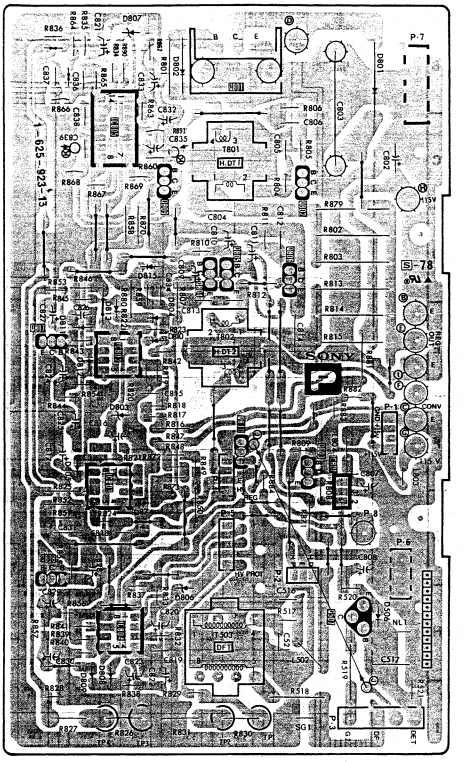
① 130.0Vp-p (H)

CB BOARD WAVEFORMS

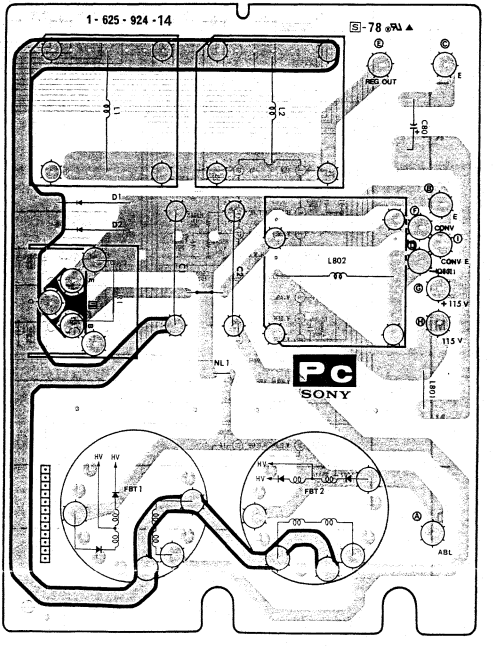


① 150.0Vp-p (H)

– P Board –

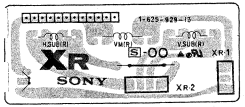


– PC Board –

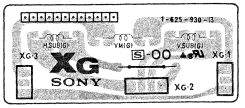


H [CONTROL SW H/V CENT SIRCS CONTROL] **XB** [B H/V SUB VM] **XG** [G H/V SUB VM] **XR** [R H/V SUB VM] **YB** [H/V DEF] **YG** [H/V DEF] **YR** [H/V DEF] **CB** [B, VIDEO OUT 1K, I

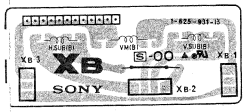
– XR Board –



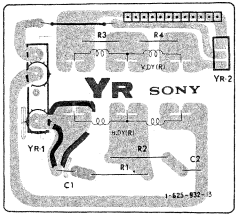
– XG Board –



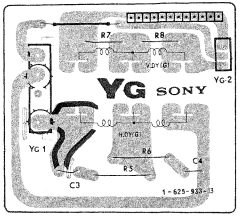
– XB Board –



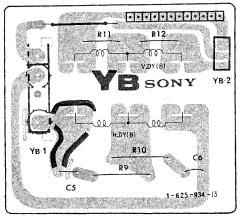
– YR Board –



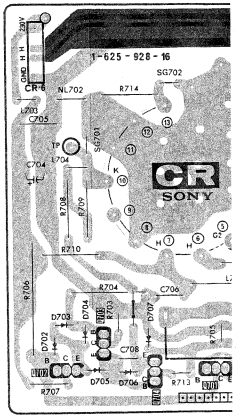
– YG Board –



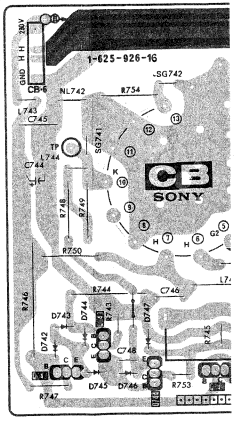
– YB Board –



– CR Board –

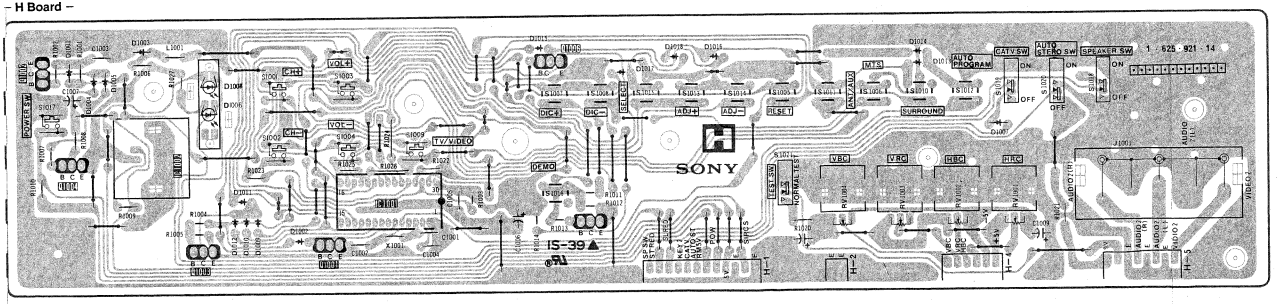


– CB Board –



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

– H Board –

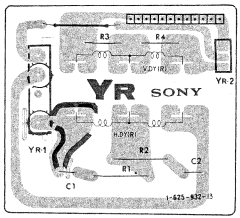


UB VM]

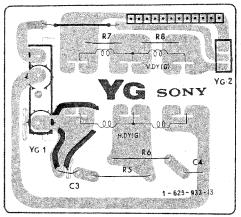
YB [H/V DEF] **YG** [H/V DEF] **YR** [H/V DEF]

CB [B, VIDEO OUT 1K, DET] **CG** [G, VIDEO OUT 1K, DET] **CR** [R, VIDEO OUT 1K, DET]

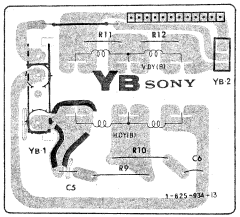
– YR Board –



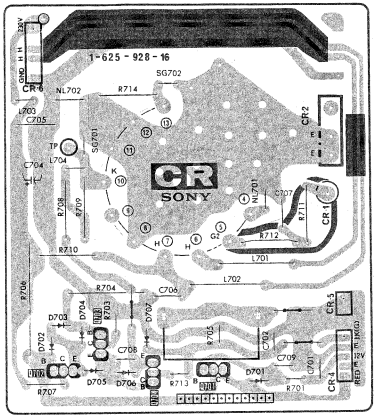
– YG Board –



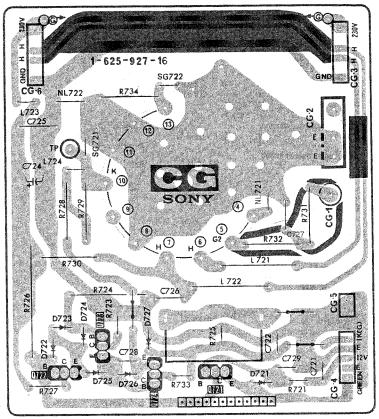
– YB Board –



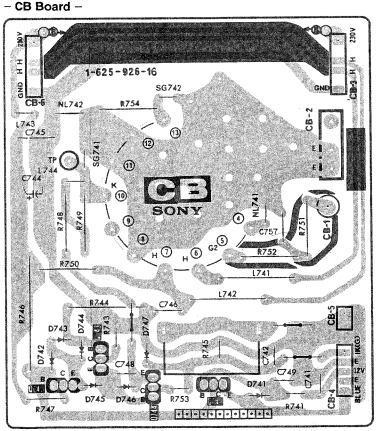
– CR Board –

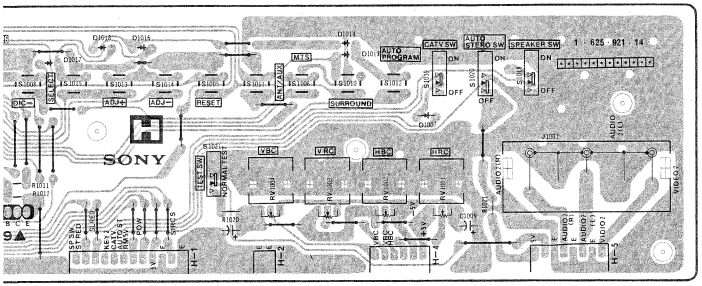


– CG Board –

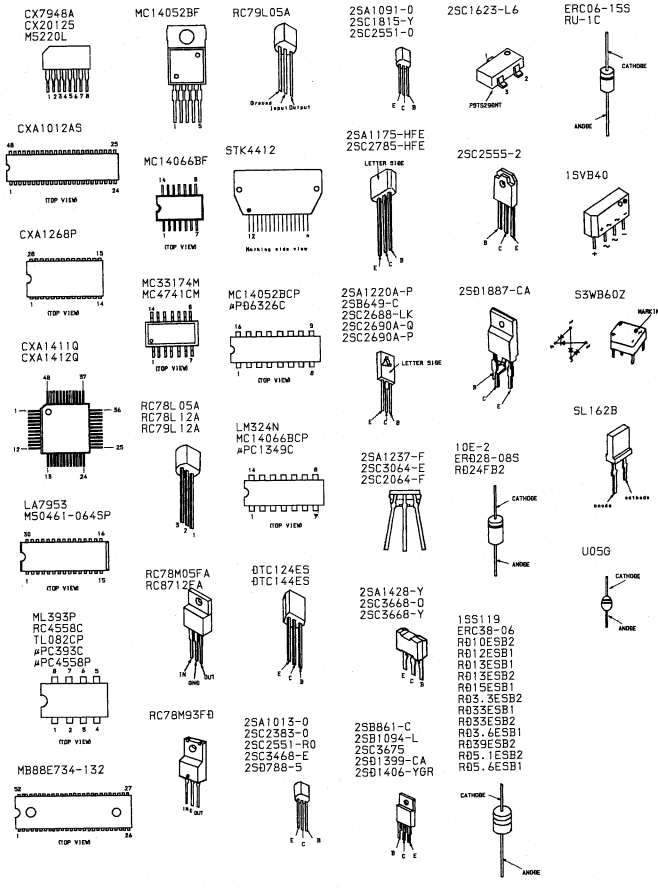


– CB Board –





6-4. SEMICONDUCTORS



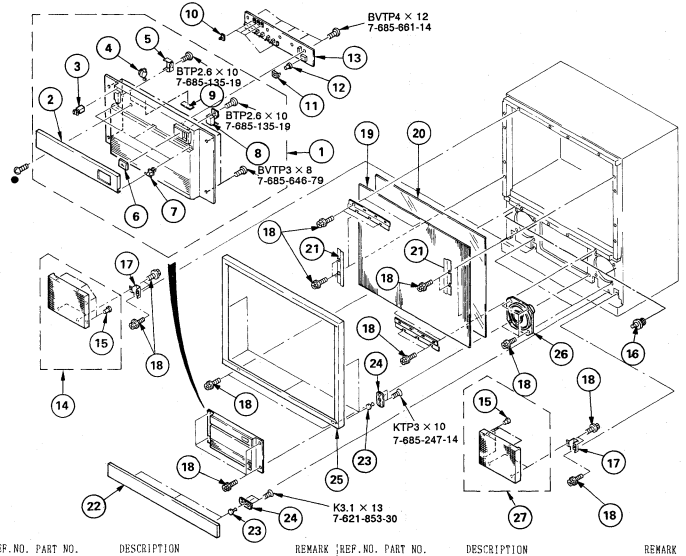
SECTION 7
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CONTROL PANEL

●: BVTP3 × 12 7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	X-4389-585-3	PANEL ASSY, CONTROL	2-9
2	4-397-071-01	DOOR, CONTROL	
3	4-392-036-01	CATCH, PUSH	
4	3-720-417-01	DAMPER, OIL	
5	4-397-047-01	HOLDER, DAMPER	
6	4-397-049-01	COVER, INDICATOR	
7	3-662-365-00	SHAFT (S), DOOR	
8	4-397-056-01	BUTTON, POWER	
9	3-831-441-59	CUSHION, SPEAKER	
10	4-381-073-11	KEY TOP, SLIDE	
11	*4-381-686-01	BRACKET (B), LIGHT GUIDE	
12	*4-374-987-01	GUIDE, LIGHT	
13	*1-625-921-11	H BOARD	
14	X-4389-586-2	GRILLE (L) ASSY, SPEAKER	15
15	4-849-034-00	CATCHER	
16	*4-397-076-01	HOLDER (U), SPEAKER GRILLE	
17	*4-397-075-01	HOLDER (L), SPEAKER GRILLE	
18	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	
19	*4-031-483-01	PLATE (L), DEFUSION	
20	4-030-948-01	PLATE (TFF), DIFFUSION	
21	4-031-204-01	HOLDER (RIGHT, LEFT), SCREEN	
22	*4-397-096-01	PANEL, FRONT	
23	4-838-452-00	STRIKE	
24	4-838-453-00	SUPPORT	
25	X-4389-587-1	FRAME ASSY, SCREEN	
26	1-544-014-11	SPEAKER	
27	X-4389-583-1	GRILLE (R) ASSY, SPEAKER	15

SECTION 7
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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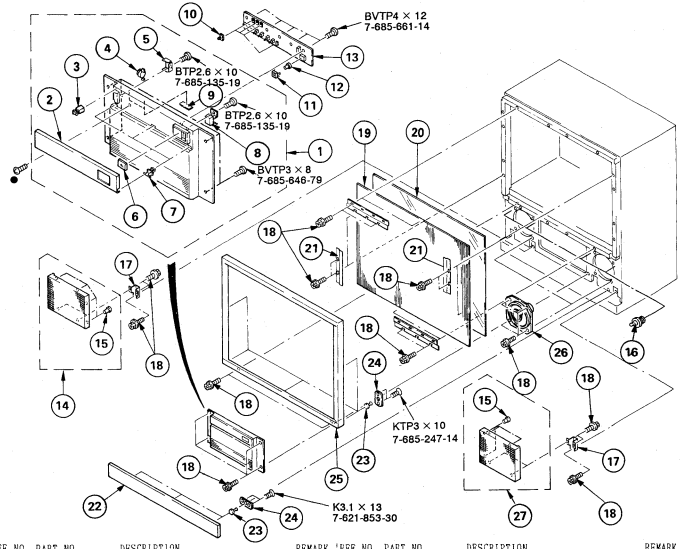
Replace only with part number specified.

7-1. CONTROL PANEL

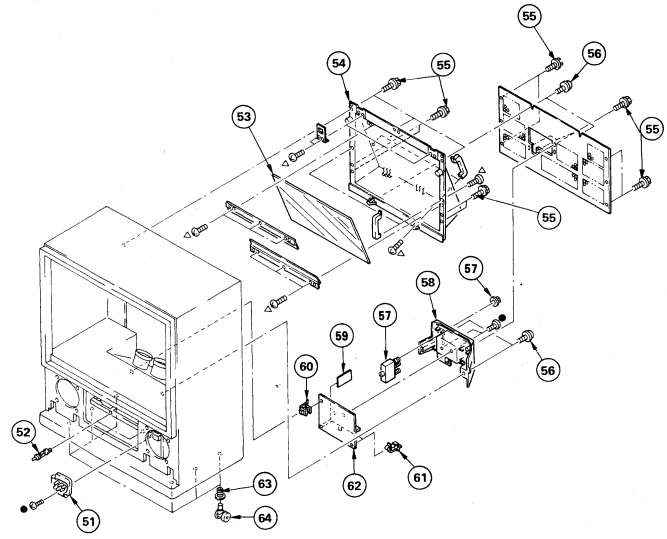
●: BVTP3 × 12 7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	X-4389-585-3	PANEL ASSY, CONTROL	2-9
2	4-397-071-01	DOOR, CONTROL	
3	4-392-036-01	CATCH, PUSH	
4	3-720-417-01	DAMPER, OIL	
5	4-397-047-01	HOLDER, DAMPER	
6	4-397-049-01	COVER, INDICATOR	
7	3-662-365-00	SHAFT (S), DOOR	
8	4-397-056-01	BUTTON, POWER	
9	3-831-441-99	CUSHION, SPEAKER	
10	4-381-073-11	KEY TOP, SLIDE	
11	*4-381-686-01	BRACKET (B), LIGHT GUIDE	
12	*4-374-987-01	GUIDE, LIGHT	
13	*1-625-921-11	H BOARD	
14	X-4389-586-2	GRILLE (L) ASSY, SPEAKER	15
15	4-849-034-00	CATCHER	
16	*4-397-076-01	HOLDER (U), SPEAKER GRILLE	
17	*4-397-075-01	HOLDER (L), SPEAKER GRILLE	
18	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	
19	*4-031-483-01	PLATE (L), DEFUSION	
20	4-030-948-01	PLATE (TFF), DIFFUSION	
21	4-031-204-01	HOLDER (RIGHT, LEFT), SCREEN	
22	*4-397-096-01	PANEL, FRONT	
23	4-838-452-00	STRIKE	
24	4-838-453-00	SUPPORT	
25	X-4389-587-1	FRAME ASSY, SCREEN	
26	1-544-014-11	SPEAKER	
27	X-4389-583-1	GRILLE (R) ASSY, SPEAKER	15

7-2. MIRROR BLOCK

●: BVTP 3 x 12 7-685-648-79
△: BVTP M4 7-685-661-79

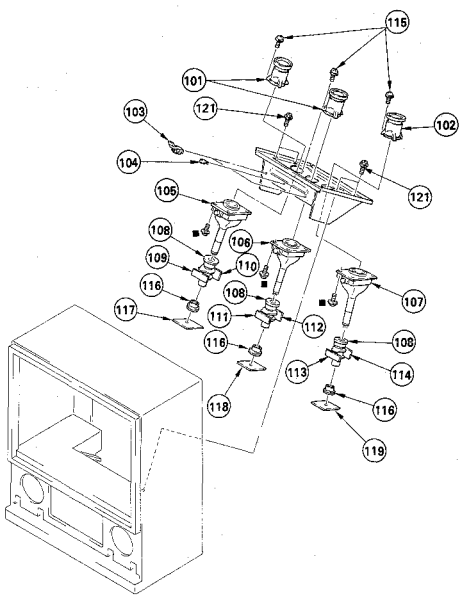


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	⚠ 1-237-582-21	RESISTOR ASSY, HIGH VOLTAGE	
52	*4-914-008-01	HOLDER, PCB	
53	4-397-069-01	MIRROR (53), REFLECTION	
54	4-397-074-01	COVER, MIRROR	
55	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	
56	3-701-610-91	SCREW, TERMINAL	
57	⚠ 1-417-177-11	SELECTOR, ANTENNA (AS-IC)	
58	X-4389-578-1	PANEL ASSY, CONNECTOR	
59	*A-1394-227-A	SX BOARD, COMPLETE	
60	*4-321-929-00	HOLDER, PC BOARD	
61	*3-682-612-00	CLIP (B), ANCHOR	
62	*A-1373-238-A	U BOARD, COMPLETE	
63	2-133-902-01	SOCKET, CASTER	
64	2-133-901-11	CASTER	

7-3. PICTURE TUBE

■: BVTP4 × 16　　7-685-663-79

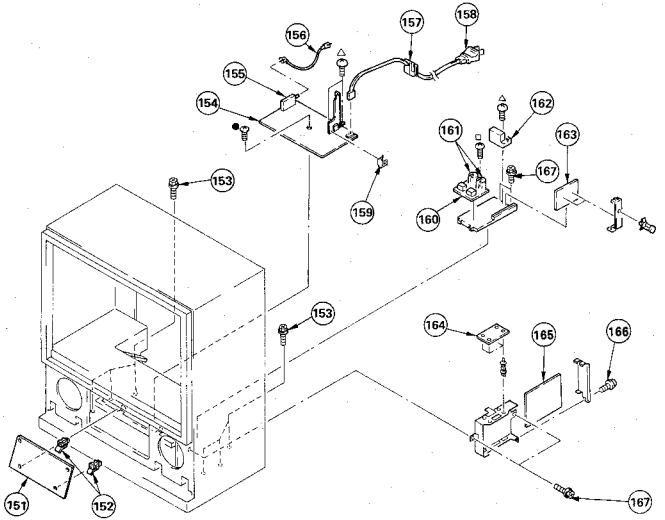


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
101	4-389-503-02	LENS	
102	4-389-503-12	LENS	
103	*3-705-141-00	HOLDER, PCB	
104	*4-861-614-00	HOLDER, PC BOARD	
105	A4-734-023-05	PICTURE TUBE (SD-20S(D))	
105	A8-734-021-05	PICTURE TUBE (SD-20S(D))	
107	A8-734-022-05	PICTURE TUBE (SD-20S(B))	
108	A1-454-522-11	DEFLECTION YOKE (Y036PAA)	
109	*1-625-929-11	XR BOARD	
110	*1-625-932-11	YR BOARD	
111	*1-625-930-11	XG BOARD	
112	*1-625-933-11	YG BOARD	
113	*1-625-931-11	XB BOARD	
114	*1-625-934-11	YB BOARD	
115	3-701-810-01	SCREW, TERMINAL	
116	A1-452-443-11	NECK ASSY, PICTURE TUBE (WA367)	
117	*A-1331-069-A	CR BOARD, COMPLETE	
118	*A-1331-070-A	CG BOARD, COMPLETE	
119	*A-1331-071-A	CB BOARD, COMPLETE	
121	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	

7-4. CHASSIS

●: BVTP 3 x 12 7-685-648-79
△: BVTP M4 7-685-661-79
□: BVTP 4 x 8 7-685-659-79



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
151	*A-1341-370-A	D BOARD, COMPLETE	
152	*3-709-141-00	HOLDER, PCB	
153	4-378-522-11	SCREW, TAPPING, HEXAGON HEAD	
154	*A-1296-731-A	A BOARD, COMPLETE	
155	A1-403-771-11	TUNER, FM/AM (KTF-2014)	
156	*1-555-400-00	CABLE, PIN	
157	A4-338-328-01	CROWBAR, AC CORD	
158	A1-559-396-12	CORD, POWER	
159	*4-399-421-01	SPRING, TR RETAINER	
160	*1-625-924-14	PC BOARD	
161	A1-439-408-21	TRANSFORMER ASSY, FLYBACK (TKV-2022)	
162	A1-453-108-11	PC BLOCK, HIGH-VOLTAGE	
163	*A-1195-039-A	P BOARD, COMPLETE	160
164	*1-627-633-11	F BOARD	
165	A1-413-536-21	G BOARD, TEST (NOVA)	
166	3-701-810-91	SCREW, TERMINAL	
167	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	

P

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⚠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1195-039-A	P BOARD, COMPLETE			
		**********			
⚠1	1-493-108-11	DC BLOCK, HIGH-VOLTAGE			
	1-506-348-69	PIN, CONNECTOR 3P			
	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P			
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P			
	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
	*1-564-506-11	PLUG, CONNECTOR 3P			
	*1-564-507-11	PLUG, CONNECTOR 4P			
	*1-564-508-11	PLUG, CONNECTOR 5P			
	*4-341-751-01	EYELET			
	*4-341-752-01	EYELET			
	*4-363-146-00	HEAT SINK, V.OUT			
	4-383-023-01	SPACER, MICA			
		<CAPACITOR>			
C516	1-106-381-12	MYLAR	0.039MF	10%	100V
C517	1-106-391-12	MYLAR	0.1MF	10%	200V
C521	1-106-351-00	MYLAR	0.0022MF	10%	100V
C802	1-123-024-21	ELECT	33MF		160V
C803	1-136-729-11	FILM	1.5MF	5%	400V
C804	1-108-700-11	MYLAR	0.047MF	10%	200V
C805	1-102-030-00	CERAMIC	330PF	10%	500V
C806	1-136-165-00	FILM	0.1MF	5%	50V
C807	1-124-907-11	ELECT	10MF	20%	50V
C808	1-124-360-00	ELECT	1000MF	20%	16V
C809	1-124-903-11	ELECT	1MF	20%	50V
C810	1-124-903-11	ELECT	1MF	20%	50V
C811	1-124-902-00	ELECT	0.47MF	20%	50V
C812	1-102-975-00	CERAMIC	100PF	5%	50V
C813	1-102-244-00	CERAMIC	220PF	10%	500V
C814	1-108-704-11	MYLAR	0.1MF	10%	200V
C815	1-108-692-11	MYLAR	0.01MF	10%	200V
C816	1-124-907-11	ELECT	10MF	20%	50V
C817	1-124-139-00	ELECT	330MF	20%	16V
C818	1-102-824-00	CERAMIC	470PF	5%	50V
C819	1-136-169-00	FILM	0.22MF	5%	50V
C820	1-124-907-11	ELECT	10MF	20%	50V
C821	1-124-907-11	ELECT	10MF	20%	50V
C822	1-124-034-51	ELECT	33MF	20%	16V
C823	1-124-907-11	ELECT	10MF	20%	50V
C824	1-124-034-51	ELECT	33MF	20%	16V
C825	1-124-034-51	ELECT	33MF	20%	16V
C826	1-124-907-11	ELECT	10MF	20%	50V
C827	1-124-907-11	ELECT	10MF	20%	50V
C828	1-124-907-11	ELECT	10MF	20%	50V
C829	1-124-034-51	ELECT	33MF	20%	16V
C830	1-124-907-11	ELECT	10MF	20%	50V
C831	1-108-638-11	MYLAR	0.1MF	10%	100V
C832	1-124-907-11	ELECT	10MF	20%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C833	1-124-925-11	ELECT	2.2MF	20%	50V
C834	1-102-973-00	CERAMIC	100PF	5%	50V
C835	1-124-927-11	ELECT	4.7MF	20%	50V
C836	1-130-475-00	MYLAR	0.0022MF	5%	50V
C837	1-136-169-00	FILM	0.22MF	5%	50V
C838	1-130-475-00	MYLAR	0.0022MF	5%	50V
C839	1-102-106-00	CERAMIC	100PF	10%	50V
		<DIODE>			
D506	8-719-911-19	DIODE 1SS119			
D801	8-719-928-08	DIODE ERD28-08S			
D802	8-719-300-80	DIODE RU-1C			
D803	8-719-109-85	DIODE RD5.1ES-B2			
D804	8-719-911-19	DIODE 1SS119			
D805	8-719-911-19	DIODE 1SS119			
D806	8-719-109-85	DIODE RD5.1ES-B2			
D807	8-719-109-85	DIODE RD5.1ES-B2			
D808	8-719-911-19	DIODE 1SS119			
D809	8-719-911-19	DIODE 1SS119			
D810	8-719-911-19	DIODE 1SS119			
D811	8-719-109-85	DIODE RD5.1ES-B2			
D812	8-719-911-19	DIODE 1SS119			
D813	8-719-911-19	DIODE 1SS119			
D815	8-719-110-36	DIODE RD13ES-B2			
D874	8-719-110-78	DIODE RD33ES-B2			
		<IC>			
IC801	8-759-982-26	IC RC78L12A			
IC802	8-759-987-16	IC LM393P			
IC803	8-759-990-82	IC TL082CP			
IC804	8-759-987-16	IC LM393P			
IC805	8-759-100-75	IC UPC1394C			
		<COIL>			
L502	1-459-060-00	COIL,DYNAMIC CONVERSION CHOKE			
L803	1-459-155-00	COIL (WITH CORE) 45UH			
L804	⚠1-414-482-41	INDUCTOR	400UH		
		<NEON LAMP>			
NL1	1-519-108-99	LAMP,NEON ASSY			
		<TRANSISTOR>			
Q507	8-729-804-48	TRANSISTOR 2SC3675			
Q801	⚠8-729-201-61	TRANSISTOR 2SC2955-K			
Q802	8-729-119-80	TRANSISTOR 2SC2688-LK			
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE			

P | PC

* The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q804	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q805	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q806	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q807	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q808	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q809	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R517	1-249-418-11	CARBON	1.2K	5%	1/4W	F
R518	1-247-764-11	CARBON	10K	5%	1/2W	
R519	1-202-730-00	SOLID	8.2K	10%	1/2W	
R520	1-249-429-11	CARBON	10K	5%	1/4W	
R521	1-247-881-00	CARBON	120K	5%	1/4W	
R801	1-216-378-11	METAL OXIDE	5.6	5%	2W	F
R802	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R803	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R804	1-249-429-11	CARBON	10K	5%	1/4W	
R805	1-249-423-11	CARBON	3.3K	5%	1/4W	
R806	1-249-425-11	CARBON	4.7K	5%	1/4W	
R807	1-260-123-91	CARBON	100K	5%	1/2W	
R808	1-249-417-11	CARBON	1K	5%	1/4W	
R809	1-249-417-11	CARBON	1K	5%	1/4W	
R810	1-249-441-11	CARBON	100K	5%	1/4W	
R811	1-249-421-11	CARBON	2.2K	5%	1/4W	
R812	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R813	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R816	1-214-777-00	METAL	100K	1%	1/4W	
R817	1-215-471-00	METAL	120K	1%	1/6W	
R818	1-215-471-00	METAL	120K	1%	1/6W	
R819	1-215-453-00	METAL	22K	1%	1/6W	
R820	1-215-453-00	METAL	22K	1%	1/6W	
R821	1-249-423-11	CARBON	3.3K	5%	1/4W	
R822	1-249-433-11	CARBON	22K	5%	1/4W	
R823	1-249-429-11	CARBON	10K	5%	1/4W	
R824	1-215-469-00	METAL	100K	1%	1/6W	
R825	1-214-761-00	METAL	22K	1%	1/4W	
⊠R826	⚠	METAL			1/4W	
⊠R827	⚠	METAL			1/4W	
R828	1-215-455-00	METAL	27K	1%	1/6W	
R829	1-215-476-00	METAL	200K	1%	1/6W	
⊠R830	⚠	METAL			1/2W	
⊠R831	⚠	METAL			1/4W	
R832	1-249-417-11	CARBON	1K	5%	1/4W	
R833	1-249-423-11	CARBON	3.3K	5%	1/4W	
R834	1-249-423-11	CARBON	3.3K	5%	1/4W	
R835	1-215-429-00	METAL	2.2K	1%	1/6W	
R836	1-215-435-00	METAL	3.9K	1%	1/6W	
R837	1-249-433-11	CARBON	22K	5%	1/4W	
R838	1-249-435-11	CARBON	33K	5%	1/4W	
R839	1-249-438-11	CARBON	56K	5%	1/4W	
R840	1-249-434-11	CARBON	27K	5%	1/4W	
R841	1-249-429-11	CARBON	10K	5%	1/4W	
R842	1-249-435-11	CARBON	33K	5%	1/4W	
R843	1-249-423-11	CARBON	3.3K	5%	1/4W	
R844	1-249-433-11	CARBON	22K	5%	1/4W	
R845	1-249-435-11	CARBON	33K	5%	1/4W	
R846	1-249-429-11	CARBON	10K	5%	1/4W	
R847	1-215-873-00	METAL OXIDE	4.7K	5%	1W	F
R848	1-215-431-00	METAL	2.7K	1%	1/6W	
R849	1-215-431-00	METAL	2.7K	1%	1/6W	
R850	1-214-741-00	METAL	3.3K	1%	1/4W	
R851	1-214-747-00	METAL	5.6K	1%	1/4W	
⊠R852	⚠	METAL			1/4W	
R853	1-215-469-00	METAL	100K	1%	1/6W	
R854	1-249-430-11	CARBON	12K	5%	1/4W	
R855	1-215-469-00	METAL	100K	1%	1/6W	
R856	1-249-430-11	CARBON	12K	5%	1/4W	
R857	1-249-433-11	CARBON	22K	5%	1/4W	
R858	1-260-095-91	CARBON	470	5%	1/2W	
R859	1-249-435-11	CARBON	33K	5%	1/4W	
R860	1-249-441-11	CARBON	100K	5%	1/4W	
R862	1-249-434-11	CARBON	27K	5%	1/4W	
R863	1-249-431-11	CARBON	15K	5%	1/4W	
R864	1-249-428-11	CARBON	8.2K	5%	1/4W	
R865	1-249-440-11	CARBON	82K	5%	1/4W	
R866	1-249-436-11	CARBON	39K	5%	1/4W	
R867	1-249-437-11	CARBON	47K	5%	1/4W	
R868	1-249-428-11	CARBON	8.2K	5%	1/4W	
R869	1-249-429-11	CARBON	10K	5%	1/4W	
R870	1-260-099-91	CARBON	1K	5%	1/2W	
R871	1-260-122-91	CARBON	82K	5%	1/2W	
R879	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R880	1-260-131-91	CARBON	10K	5%	1/2W	
R881	1-215-873-00	METAL OXIDE	4.7K	5%	1W	F
R882	1-215-473-00	METAL	150K	1%	1/6W	
R883	1-215-451-00	METAL	18K	1%	1/6W	
R884	1-249-401-11	CARBON	47	5%	1/4W	
R890	1-249-423-11	CARBON	3.3K	5%	1/4W	
R891	1-249-425-11	CARBON	4.7K	5%	1/4W	
		<SPARK GAP>				
SG1	1-519-422-11	GAP, SPARK				
		<TRANSFORMER>				
T503	1-413-059-00	TRANSFORMER, FERRITE (DFT)				
T801	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE				
T802	1-437-090-00	HOT				

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*1-625-924-14 PC BOARD
****

*4-341-751-01 EYELET
*4-341-752-01 EYELET
4-582-854-11 SCREW (W3X10), P, SW (+)

<CAPACITOR>

C1	⚠ 1-136-723-11	FILM	0.02MF	3%	1.6KV	
C2	⚠ 1-136-729-11	FILM	1.5MF	5%	400V	
C801	1-125-457-11	ELECT (BLOCK)	560MF	20%	200V	

<DIODE>

D1 8-719-945-80 DIODE ERC06-15S

<COIL>

L1	⚠ 1-424-401-11	COIL, CHOKE 1.05MMH	
L801	1-459-862-11	COIL, CHOKE 900UH	
L802	1-424-401-11	COIL, CHOKE 1.05MMH	

<NEON LAMP>

PC F A

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
NL1	1-519-108-99	LAMP,NEON ASSY			
		<TRANSISTOR>			
Q1	8B-729-805-07	TRANSISTOR 2SD1887-CA			
		<RESISTOR>			
R1	1-260-083-11	CARBON 47 5% 1/2W			
		<TRANSFORMER>			
T1	A1-439-408-21	TRANSFORMER ASSY, FLYBACK (NX-2022)			
T2	A1-439-408-21	TRANSFORMER ASSY, FLYBACK (NX-2022)			
**********					
	*1-627-633-11	F BOARD, COMPLETE			
		*******			
	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
		<RESISTOR>			
R2001	A1-205-712-11	WIREWOUND 3.9 5% 20W F			
R2002	A1-205-712-11	WIREWOUND 3.9 5% 20W F			
**********					
	*A-1296-731-A	A BOARD, COMPLETE			
		**********			
	1-506-348-99	PIN, CONNECTOR 3P			
	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P			
	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
	*1-533-146-00	HOLDER, FUSE			
	*1-564-506-11	PLUG, CONNECTOR 3P			
	*1-564-507-11	PLUG, CONNECTOR 4P			
	*1-564-509-11	PLUG, CONNECTOR 6P			
	*1-564-510-11	PLUG, CONNECTOR 7P			
	*1-564-511-11	PLUG, CONNECTOR 8P			
	*1-564-512-11	PLUG, CONNECTOR 9P			
	*1-564-515-11	PLUG, CONNECTOR 12P			
	*4-028-047-01	HEAT SINK, CLIP TYPE			
	*4-341-751-01	EYELET			
	*4-341-752-01	EYELET			
	4-383-022-01	SPACER, MICA			
		<CAPACITOR>			
C001	1-102-961-00	CERAMIC 27PF	5%	50V	
C002	1-102-965-00	CERAMIC 39PF	5%	50V	
C003	1-102-125-00	CERAMIC 0.0047MF	10%	50V	
C004	1-102-125-00	CERAMIC 0.0047MF	10%	50V	
C006	1-102-973-00	CERAMIC 100PF	5%	50V	
C007	1-101-004-00	CERAMIC 0.01MF		50V	
C008	1-101-880-00	CERAMIC 47PF	5%	50V	
C009	1-101-880-00	CERAMIC 47PF	5%	50V	
C010	1-126-101-11	ELECT 100MF	20%	16V	
C011	1-130-487-00	MYLAR 0.022MF	5%	50V	
C012	1-124-477-11	ELECT 47MF	20%	16V	
C013	1-119-160-00	ELECT 470MF		10V	
C020	1-124-907-11	ELECT 10MF	20%	50V	
C021	1-124-927-11	ELECT 4.7MF	20%	50V	
C022	1-124-903-11	ELECT 1MF	20%	50V	
C023	1-124-903-11	ELECT 1MF	20%	50V	
C024	1-124-903-11	ELECT 1MF	20%	50V	
C025	1-124-477-11	ELECT 47MF	20%	16V	
C026	1-102-978-00	CERAMIC 220PF	5%	50V	
C027	1-124-477-11	ELECT 47MF	20%	16V	
C035	1-102-978-00	CERAMIC 220PF	5%	50V	
C036	1-101-006-00	CERAMIC 0.047MF		50V	
C037	1-130-497-00	MYLAR 0.15MF	5%	50V	
C038	1-101-004-00	CERAMIC 0.01MF		50V	
C039	1-101-004-00	CERAMIC 0.01MF		50V	
C040	1-102-963-00	CERAMIC 33PF	5%	50V	
C041	1-102-978-00	CERAMIC 220PF	5%	50V	
C042	1-106-363-00	MYLAR 0.0068MF	10%	100V	
C043	1-124-907-11	ELECT 10MF	20%	50V	
C101	1-124-907-11	ELECT 10MF	20%	50V	
C102	1-124-477-11	ELECT 47MF	20%	16V	
C103	1-126-101-11	ELECT 100MF	20%	16V	
C104	1-126-233-11	ELECT 22MF	20%	25V	
C105	1-101-003-00	CERAMIC 0.0047MF		50V	
C106	1-101-003-00	CERAMIC 0.0047MF		50V	
C107	1-102-121-00	CERAMIC 0.0022MF	10%	50V	
C108	1-124-907-11	ELECT 10MF	20%	50V	
C109	1-102-074-00	CERAMIC 0.001MF	10%	50V	
C110	1-124-046-00	ELECT 10MF	20%	160V	
C111	1-124-557-11	ELECT 1000MF	20%	25V	
C112	1-126-101-11	ELECT 100MF	20%	16V	
C113	1-124-477-11	ELECT 47MF	20%	16V	
C114	1-126-101-11	ELECT 100MF	20%	16V	
C116	1-126-101-11	ELECT 100MF	20%	16V	
C121	1-124-557-11	ELECT 1000MF	20%	25V	
C130	1-124-360-00	ELECT 1000MF	20%	16V	
C202	1-102-973-00	CERAMIC 100PF	5%	50V	
C203	1-124-903-11	ELECT 1MF	20%	50V	
C204	1-124-477-11	ELECT 47MF	20%	16V	
C205	1-124-903-11	ELECT 1MF	20%	50V	
C206	1-124-927-11	ELECT 4.7MF	20%	50V	
C207	1-124-907-11	ELECT 10MF	20%	50V	
C208	1-106-365-00	MYLAR 0.056MF	10%	100V	
C209	1-106-363-00	MYLAR 0.0068MF	10%	100V	
C210	1-124-903-11	ELECT 1MF	20%	50V	
C211	1-106-363-00	MYLAR 0.0068MF	10%	100V	
C212	1-124-907-11	ELECT 10MF	20%	50V	
C213	1-124-902-00	ELECT 0.47MF	20%	50V	
C214	1-130-483-00	MYLAR 0.01MF	5%	50V	
C215	1-124-902-00	ELECT 0.47MF	20%	50V	
C216	1-124-902-00	ELECT 0.47MF	20%	50V	
C217	1-126-101-11	ELECT 100MF	20%	16V	
C218	1-130-483-00	MYLAR 0.01MF	5%	50V	
C219	1-124-477-11	ELECT 47MF	20%	16V	
C220	1-101-884-00	CERAMIC 56PF	5%	50V	
C221	1-102-961-00	CERAMIC 27PF	5%	50V	
C222	1-102-951-00	CERAMIC 15PF	5%	50V	
C224	1-102-038-00	CERAMIC 0.001MF		500V	
C225	1-130-493-00	MYLAR 0.068MF	5%	50V	
C226	1-124-903-11	ELECT 1MF	20%	50V	
C227	1-130-489-00	MYLAR 0.033MF	5%	50V	
C228	1-124-925-11	ELECT 2.2MF	20%	50V	
C229	1-130-487-00	MYLAR 0.022MF	5%	50V	
C230	1-130-483-00	MYLAR 0.01MF	5%	50V	
C231	1-124-464-11	ELECT 0.22MF	20%	50V	
C233	1-124-119-00	ELECT 330MF	20%	16V	
C234	1-124-902-00	ELECT 0.47MF	20%	50V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION				REMARK
C235	1-106-359-00	MYLAR	0.0047MF	5%	50V	
C236	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C237	1-126-320-11	ELECT	10MF	20%	16V	
C238	1-124-464-11	ELECT	0.22MF	20%	50V	
C239	1-126-233-11	ELECT	22MF	20%	25V	
C241	1-124-907-11	ELECT	10MF	20%	50V	
C290	1-130-487-00	MYLAR	0.022MF	5%	50V	
C291	1-124-903-11	ELECT	1MF	20%	50V	
C292	1-130-483-00	MYLAR	0.01MF	5%	50V	
C293	1-124-903-11	ELECT	1MF	20%	50V	
C300	1-106-359-00	MYLAR	0.0047MF	5%	50V	
C502	1-126-101-11	ELECT	100MF	20%	16V	
C503	1-126-101-11	ELECT	100MF	20%	16V	
C504	⚠ 1-136-722-11	FILM	0.008MF	5%	1.6KV	
C505	1-106-383-00	MYLAR	0.047MF		200V	
C506	1-102-030-00	CERAMIC	330PF	10%	500V	
C507	1-102-973-00	CERAMIC	100PF	5%	50V	
C508	1-124-902-00	ELECT	0.47MF	20%	50V	
C509	⚠ 1-136-113-11	FILM	2MF	5%	200V	
C510	⚠ 1-136-113-11	FILM	2MF	5%	200V	
C511	1-123-935-00	ELECT	33MF	20%	160V	
C512	1-130-487-00	MYLAR	0.022MF	5%	50V	
C513	1-106-383-00	MYLAR	0.047MF		200V	
C514	1-130-483-00	MYLAR	0.01MF	5%	50V	
C515	1-124-477-11	ELECT	47MF	20%	16V	
C518	1-124-662-11	ELECT	220MF	20%	50V	
C519	1-124-662-11	ELECT	220MF	20%	50V	
C520	1-124-662-11	ELECT	220MF	20%	50V	
C551	1-130-487-00	MYLAR	0.022MF	5%	50V	
C552	1-126-101-11	ELECT	100MF	20%	16V	
C553	1-130-483-00	MYLAR	0.01MF	5%	50V	
C554	1-102-824-00	CERAMIC	470PF	5%	50V	
C555	1-130-483-00	MYLAR	0.01MF	5%	50V	
C556	1-124-477-11	ELECT	47MF	20%	16V	
C557	1-124-477-11	ELECT	47MF	20%	16V	
C558	1-130-483-00	MYLAR	0.01MF	5%	50V	
C559	1-102-824-00	CERAMIC	470PF	5%	50V	
C560	1-130-483-00	MYLAR	0.01MF	5%	50V	
C561	1-102-824-00	CERAMIC	470PF	5%	50V	
C562	1-130-483-00	MYLAR	0.01MF	5%	50V	
C563	1-102-824-00	CERAMIC	470PF	5%	50V	
C564	1-130-487-00	MYLAR	0.022MF	5%	50V	
C565	1-126-101-11	ELECT	100MF	20%	16V	
C566	1-102-824-00	CERAMIC	470PF	5%	50V	
C567	1-102-824-00	CERAMIC	470PF	5%	50V	
C568	1-124-925-11	ELECT	2.2MF	20%	50V	
C572	1-124-477-11	ELECT	47MF	20%	16V	
C580	1-124-046-00	ELECT	10MF	20%	160V	
C651	⚠ 1-136-813-51	FILM	0.47MF	20%	125V	
C653	⚠ 1-161-743-12	CERAMIC	0.0047MF		400V	
C654	⚠ 1-161-743-12	CERAMIC	0.0047MF		400V	
C655	⚠ 1-136-313-51	FILM	0.47MF	20%	125V	
C656	1-161-743-00	CERAMIC	0.0047MF		400V	
C657	1-161-743-00	CERAMIC	0.0047MF		400V	
C658	1-125-320-00	ELECT(BLOCK)	820MF		200V	
C659	1-125-320-00	ELECT(BLOCK)	820MF		200V	
C660	1-161-743-00	CERAMIC	0.0047MF		400V	
C661	1-106-383-00	MYLAR	0.047MF	10%	100V	
C662	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C663	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C664	1-124-480-11	ELECT	470MF	20%	25V	
C665	1-124-119-00	ELECT	330MF	20%	16V	
C666	1-124-119-00	ELECT	330MF	20%	16V	
C667	1-124-119-00	ELECT	330MF	20%	16V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C669	1-126-101-11	ELECT	100MF	20%	16V	
C670	1-124-477-11	ELECT	47MF	20%	16V	
C901	1-124-607-11	ELECT	2200MF	20%	50V	
C902	1-124-122-11	ELECT	100MF	20%	50V	
C903	1-124-122-11	ELECT	100MF	20%	50V	
C904	1-124-618-11	ELECT	2200MF	20%	35V	
C905	1-124-910-11	ELECT	47MF	20%	50V	
C906	1-130-495-00	MYLAR	0.1MF	5%	50V	
C907	1-130-499-00	MYLAR	0.22MF	5%	50V	
C908	1-124-122-11	ELECT	100MF	20%	50V	
C909	1-124-902-00	ELECT	0.47MF	20%	50V	
C910	1-102-824-00	CERAMIC	470PF	5%	50V	
C911	1-124-910-11	ELECT	47MF	20%	50V	
C912	1-124-618-11	ELECT	2200MF	20%	35V	
C913	1-130-495-00	MYLAR	0.1MF	5%	50V	
C914	1-130-499-00	MYLAR	0.22MF	5%	50V	
C915	1-124-122-11	ELECT	100MF	20%	50V	
C916	1-124-902-00	ELECT	0.47MF	20%	50V	
C917	1-102-824-00	CERAMIC	470PF	5%	50V	
C918	1-124-477-11	ELECT	47MF	20%	16V	
C919	1-124-477-11	ELECT	47MF	20%	16V	
C920	1-124-477-11	ELECT	47MF	20%	16V	
C921	1-124-477-11	ELECT	47MF	20%	16V	
C922	1-124-119-00	ELECT	330MF	20%	16V	
C923	1-126-101-11	ELECT	100MF	20%	16V	
C924	1-124-119-00	ELECT	330MF	20%	16V	

<COMPOSITION CIRCUIT BLOCK>

CP001	1-232-172-11	COMPOSITION CIRCUIT BLOCK	
CP002	1-233-161-11	COMPOSITION CIRCUIT BLOCK	
CP003	1-233-161-11	COMPOSITION CIRCUIT BLOCK	
CP004	1-233-171-11	COMPOSITION CIRCUIT BLOCK	
CP005	1-232-182-11	COMPOSITION CIRCUIT BLOCK	
CP006	1-231-682-00	COMPOSITION CIRCUIT BLOCK	
CP007	1-232-028-00	COMPOSITION CIRCUIT BLOCK	
CP008	1-232-257-00	COMPOSITION CIRCUIT BLOCK	
CP009	1-232-400-11	COMPOSITION CIRCUIT BLOCK	

<DIODE>

D001	8-719-911-19	DIODE 1SS119	
D010	8-719-109-68	DIODE RD3.6ES-B1	
D012	8-719-911-19	DIODE 1SS119	
D101	8-719-110-76	DIODE RD33ES-B1	
D201	8-719-911-19	DIODE 1SS119	
D202	8-719-109-66	DIODE RD3.3ES-B2	
D203	8-719-911-19	DIODE 1SS119	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-911-19	DIODE 1SS119	
D206	8-719-911-19	DIODE 1SS119	
D210	8-719-110-30	DIODE RD12ES-B1	
D220	8-719-109-50	DIODE RD2.0ES-B1	
D290	8-719-911-19	DIODE 1SS119	
D501	8-719-300-80	DIODE RU-1Z	
D504	⚠ 8-719-901-93	DIODE V19B	
D505	⚠ 8-719-901-93	DIODE V19B	
D507	8-719-911-19	DIODE 1SS119	
D651	8-719-503-06	DIODE S4WB60Z	
D652	8-719-511-40	DIODE S1VB40	
D653	8-719-200-02	DIODE 10E2	
D901	8-719-911-19	DIODE 1SS119	
D902	8-719-911-19	DIODE 1SS119	
D904	8-719-911-55	DIODE U05G	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D905	8-719-160-78	DIODE RD24F-B2	
D906	8-719-110-39	DIODE RD15ES-B1	
		<FUSE>	
F651	⚠1-532-748-11	FUSE, GLASS TUBE 6.3A/125V	
		<IC>	
IC001	8-759-998-78	IC MB88E734-132	
IC002	8-759-102-28	IC UPD6326C	
IC101	⚠8-759-982-35	IC RC78M12FA	
IC102	⚠8-759-982-37	IC RC78M03FD	
IC103	⚠8-759-982-31	IC RC78M05FA	
IC201	8-752-031-71	IC CXA1012AS	
IC202	8-759-012-52	IC CX20125	
IC551	8-759-945-58	IC RC4558P	
IC552	8-759-945-58	IC RC4558P	
IC553	8-759-945-58	IC RC4558P	
IC651	8-759-982-26	IC RC78L12A	
IC652	8-759-982-21	IC RC78L05A	
IC901	⚠8-749-920-74	IC STK4412	
MM901	8-741-156-80	IC SBX1568-51	
		<IF BLOCK>	
IF101	1-464-755-21	IF BLOCK (IFE-450A)	
		<COIL>	
L001	1-408-421-00	INDUCTOR 100UH	
L003	1-408-404-00	INDUCTOR 3.9UH	
L004	1-408-404-00	INDUCTOR 3.9UH	
L005	1-408-404-00	INDUCTOR 3.9UH	
L006	1-408-404-00	INDUCTOR 3.9UH	
L101	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-408-421-00	INDUCTOR 100UH	
L103	1-408-408-00	INDUCTOR 8.2UH	
L105	1-459-155-00	COIL (WITH CORE) 45UH	
L106	1-459-155-00	COIL (WITH CORE) 45UH	
L201	1-410-472-41	INDUCTOR 15UH	
L202	1-410-466-41	INDUCTOR 4.7UH	
L204	1-408-429-00	INDUCTOR 470UH	
L501	1-408-421-00	INDUCTOR 100UH	
L503	⚠1-459-241-12	COIL, HORIZONTAL LINEALITY	
L901	1-459-155-00	COIL (WITH CORE) 45UH	
L902	1-459-155-00	COIL (WITH CORE) 45UH	
		<TRANSISTOR>	
Q001	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q002	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q003	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q004	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q005	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q006	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q007	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q016	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q017	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q018	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q202	8-729-119-76	TRANSISTOR 2SA1175-HFE	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q205	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q206	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q207	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q208	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q209	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q210	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q211	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q215	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q216	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q217	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q221	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q222	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q223	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q224	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q225	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q226	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q501	8-729-800-80	TRANSISTOR 2SD1399-CA	
Q502	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q503	8-729-386-12	TRANSISTOR 2SB861-C	
Q504	8-729-304-92	TRANSISTOR 2SB649A-C	
Q505	8-729-201-32	TRANSISTOR 2SA1013-O	
Q506	8-729-201-32	TRANSISTOR 2SA1013-O	
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q508	8-729-900-89	TRANSISTOR DTC144ES	
Q551	8-729-205-96	TRANSISTOR 2SC3668-O	
Q552	8-729-205-95	TRANSISTOR 2SA1428-Y	
Q553	8-729-205-96	TRANSISTOR 2SC3668-O	
Q554	8-729-205-95	TRANSISTOR 2SA1428-Y	
Q555	8-729-205-96	TRANSISTOR 2SC3668-O	
Q556	8-729-205-95	TRANSISTOR 2SA1428-Y	
Q651	8-729-376-84	TRANSISTOR 2SD788-S	
Q903	⚠8-729-378-82	TRANSISTOR 2SD788-S	
Q904	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q905	8-729-900-36	TRANSISTOR DTC124ES	
Q907	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q908	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		<RESISTOR>	
R001	1-260-103-91	CARBON 2.2K 5% 1/2W	
R003	1-249-416-11	CARBON 820 5% 1/4W	
R004	1-249-416-11	CARBON 820 5% 1/4W	
R005	1-249-416-11	CARBON 820 5% 1/4W	
R006	1-249-431-11	CARBON 15K 5% 1/4W	
R007	1-260-111-91	CARBON 10K 5% 1/2W	
R008	1-249-421-11	CARBON 2.2K 5% 1/4W	
R009	1-249-412-11	CARBON 390 5% 1/4W	
R010	1-249-433-11	CARBON 22K 5% 1/4W	
R011	1-249-421-11	CARBON 2.2K 5% 1/4W	
R012	1-249-437-11	CARBON 47K 5% 1/4W	
R013	1-249-437-11	CARBON 47K 5% 1/4W	
R014	1-249-441-11	CARBON 100K 5% 1/4W	
R015	1-249-433-11	CARBON 22K 5% 1/4W	
R016	1-249-417-11	CARBON 1K 5% 1/4W	
R017	1-260-111-91	CARBON 10K 5% 1/2W	
R018	1-249-421-11	CARBON 2.2K 5% 1/4W	
R019	1-249-421-11	CARBON 2.2K 5% 1/4W	
R020	1-249-417-11	CARBON 1K 5% 1/4W	
R021	1-249-414-11	CARBON 560 5% 1/4W	
R022	1-249-409-11	CARBON 220 5% 1/4W	

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A

REF.NO.	PART NO.	DESCRIPTION				REMARK
R023	1-249-409-11	CARBON	220	5%	1/4W	
R024	1-249-409-11	CARBON	220	5%	1/4W	
R025	1-249-417-11	CARBON	1K	5%	1/4W	
R027	1-249-413-11	CARBON	470	5%	1/4W	
R028	1-249-413-11	CARBON	470	5%	1/4W	
R029	1-260-111-91	CARBON	10K	5%	1/2W	
R030	1-249-423-11	CARBON	2.2K	5%	1/4W	
R031	1-249-421-11	CARBON	2.2K	5%	1/4W	
R032	1-260-108-91	CARBON	5.6K	5%	1/2W	
R033	1-249-423-11	CARBON	3.3K	5%	1/4W	
R034	1-260-103-91	CARBON	2.2K	5%	1/2W	
R035	1-260-103-91	CARBON	2.2K	5%	1/2W	
R036	1-249-433-11	CARBON	22K	5%	1/4W	
R037	1-249-433-11	CARBON	22K	5%	1/4W	
R038	1-249-423-11	CARBON	3.3K	5%	1/4W	
R039	1-249-429-11	CARBON	10K	5%	1/4W	
R040	1-249-417-11	CARBON	1K	5%	1/4W	
R041	1-249-417-11	CARBON	1K	5%	1/4W	
R042	1-249-417-11	CARBON	1K	5%	1/4W	
R043	1-249-429-11	CARBON	10K	5%	1/4W	
R044	1-249-429-11	CARBON	10K	5%	1/4W	
R045	1-249-434-11	CARBON	27K	5%	1/4W	
R046	1-249-411-11	CARBON	330	5%	1/4W	
R047	1-249-429-11	CARBON	10K	5%	1/4W	
R048	1-247-893-11	CARBON	390K	5%	1/4W	
R049	1-249-434-11	CARBON	27K	5%	1/4W	
R051	1-247-893-11	CARBON	390K	5%	1/4W	
R052	1-249-434-11	CARBON	27K	5%	1/4W	
R054	1-249-409-11	CARBON	220	5%	1/4W	
R055	1-249-409-11	CARBON	220	5%	1/4W	
R056	1-247-893-11	CARBON	390K	5%	1/4W	
R057	1-249-434-11	CARBON	27K	5%	1/4W	
R059	1-249-409-11	CARBON	220	5%	1/4W	
R063	1-249-427-11	CARBON	6.8K	5%	1/4W	
R064	1-249-427-11	CARBON	6.8K	5%	1/4W	
R067	1-249-408-11	CARBON	180	5%	1/4W	
R068	1-249-409-11	CARBON	220	5%	1/4W	
R076	1-260-099-91	CARBON	1K	5%	1/2W	
R077	1-249-421-11	CARBON	2.2K	5%	1/4W	
R078	1-249-425-11	CARBON	4.7K	5%	1/4W	
R079	1-249-414-11	CARBON	560	5%	1/4W	
R080	1-249-433-11	CARBON	22K	5%	1/4W	
R081	1-249-416-11	CARBON	820	5%	1/4W	
R084	1-260-095-91	CARBON	470	5%	1/2W	
R085	1-260-107-91	CARBON	4.7K	5%	1/2W	
R087	1-249-438-11	CARBON	56K	5%	1/4W	
R088	1-249-423-11	CARBON	3.3K	5%	1/4W	
R089	1-260-116-91	CARBON	27K	5%	1/2W	
R090	1-249-433-11	CARBON	22K	5%	1/4W	
R091	1-249-429-11	CARBON	10K	5%	1/4W	
R092	1-249-435-11	CARBON	33K	5%	1/4W	
R093	1-249-429-11	CARBON	10K	5%	1/4W	
R094	1-249-417-11	CARBON	1K	5%	1/4W	
R095	1-249-421-11	CARBON	2.2K	5%	1/4W	
R101	1-260-108-91	CARBON	5.6K	5%	1/2W	
R102	1-249-429-11	CARBON	10K	5%	1/4W	
R103	1-260-099-91	CARBON	1K	5%	1/2W	
R104	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R105	1-249-433-11	CARBON	22K	5%	1/4W	
R106	1-249-421-11	CARBON	2.2K	5%	1/4W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-433-11	CARBON	22K	5%	1/4W	
R109	1-249-419-11	CARBON	1.5K	5%	1/4W	
R110	1-249-439-11	CARBON	68K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R111	1-249-417-11	CARBON	1K	5%	1/4W	
R112	1-249-425-11	CARBON	4.7K	5%	1/4W	
R113	1-249-414-11	CARBON	560	5%	1/4W	
R114	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-249-417-11	CARBON	1K	5%	1/4W	
R116	1-215-883-11	METAL OXIDE	33	5%	2W	F
R117	⚠ 1-215-930-51	METAL OXIDE	10	5%	5W	F
R118	⚠ 1-215-882-91	METAL OXIDE	22	5%	2W	F
R119	1-249-401-11	CARBON	47	5%	1/4W	
R122	⚠ 1-212-934-61	FUSIBLE	1	5%	1/2W	F
R201	1-249-425-11	CARBON	4.7K	5%	1/4W	
R202	1-260-101-91	CARBON	1.5K	5%	1/2W	
R203	1-249-410-11	CARBON	270	5%	1/4W	
R205	1-202-729-00	SOLID	6.8M	10%	1/2W	
R206	1-249-423-11	CARBON	3.3K	5%	1/4W	
R207	1-249-429-11	CARBON	10K	5%	1/4W	
R208	1-247-901-11	CARBON	820K	5%	1/4W	
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-249-434-11	CARBON	27K	5%	1/4W	
R211	1-249-429-11	CARBON	10K	5%	1/4W	
R212	1-249-429-11	CARBON	10K	5%	1/4W	
R213	1-249-429-11	CARBON	10K	5%	1/4W	
R214	1-249-417-11	CARBON	1K	5%	1/4W	
R215	1-249-417-11	CARBON	1K	5%	1/4W	
R216	1-249-429-11	CARBON	10K	5%	1/4W	
R217	1-247-897-11	CARBON	560K	5%	1/4W	
R218	1-247-895-00	CARBON	470K	5%	1/4W	
R219	1-249-427-11	CARBON	6.8K	5%	1/4W	
R220	1-249-412-11	CARBON	390	5%	1/4W	
R221	1-249-412-11	CARBON	390	5%	1/4W	
R222	1-249-411-11	CARBON	330	5%	1/4W	
R223	1-260-100-91	CARBON	1.2K	5%	1/2W	
R224	1-247-899-11	CARBON	680K	5%	1/4W	
R225	1-249-418-11	CARBON	1.2K	5%	1/4W	
R226	1-249-422-11	CARBON	2.7K	5%	1/4W	
R227	1-260-103-91	CARBON	2.2K	5%	1/2W	
R228	1-249-422-11	CARBON	2.7K	5%	1/4W	
R229	1-249-414-11	CARBON	560	5%	1/4W	
R230	1-249-405-11	CARBON	100	5%	1/4W	
R231	1-249-412-11	CARBON	390	5%	1/4W	
R233	1-249-417-11	CARBON	1K	5%	1/4W	
R235	1-249-438-11	CARBON	56K	5%	1/4W	
R236	1-249-417-11	CARBON	1K	5%	1/4W	
R237	1-249-417-11	CARBON	1K	5%	1/4W	
R238	1-249-417-11	CARBON	1K	5%	1/4W	
R239	1-249-421-11	CARBON	2.2K	5%	1/4W	
R240	1-249-425-11	CARBON	4.7K	5%	1/4W	
R241	1-249-430-11	CARBON	12K	5%	1/4W	
R242	1-249-436-11	CARBON	39K	5%	1/4W	
R243	1-249-421-11	CARBON	2.2K	5%	1/4W	
R244	1-260-103-91	CARBON	2.2K	5%	1/2W	
R245	1-249-414-11	CARBON	560	5%	1/4W	
R246	1-249-411-11	CARBON	330	5%	1/4W	
R247	1-249-411-11	CARBON	330	5%	1/4W	
R248	1-249-411-11	CARBON	330	5%	1/4W	
R249	1-215-675-00	METAL	180K	1%	1/6W	
R250	1-215-455-00	METAL	27K	1%	1/6W	
R251	1-214-790-00	METAL	130K	1%	1/4W	
R252	1-249-436-11	CARBON	39K	5%	1/4W	
R253	1-249-421-11	CARBON	2.2K	5%	1/4W	
R254	1-249-427-11	CARBON	6.8K	5%	1/4W	
R255	1-249-424-11	CARBON	3.9K	5%	1/4W	
R256	1-260-089-91	CARBON	150	5%	1/2W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R257	1-260-107-91	CARBON	4.7K	5%	1/2W	
R258	1-260-103-91	CARBON	2.2K	5%	1/2W	
R259	1-249-422-11	CARBON	2.7K	5%	1/4W	
R260	1-249-429-11	CARBON	10K	5%	1/4W	
R261	1-215-472-00	METAL	130K	1%	1/6W	
R262	1-249-423-11	CARBON	3.3K	5%	1/4W	
R263	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R264	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R265	1-249-413-11	CARBON	470	5%	1/4W	
R266	1-249-417-11	CARBON	1K	5%	1/4W	
R267	1-249-418-11	CARBON	1.2K	5%	1/4W	
R268	1-249-425-11	CARBON	4.7K	5%	1/4W	
R269	1-249-413-11	CARBON	470	5%	1/4W	
R270	1-249-409-11	CARBON	220	5%	1/4W	
R271	1-249-417-11	CARBON	1K	5%	1/4W	
R273	1-260-111-91	CARBON	10K	5%	1/2W	
R274	1-249-431-11	CARBON	15K	5%	1/4W	
R278	1-249-438-11	CARBON	56K	5%	1/4W	
R279	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R281	1-249-423-11	CARBON	3.3K	5%	1/4W	
R282	1-249-434-11	CARBON	27K	5%	1/4W	
R283	1-249-425-11	CARBON	4.7K	5%	1/4W	
R284	1-260-099-91	CARBON	1K	5%	1/2W	
R285	1-260-099-91	CARBON	1K	5%	1/2W	
R286	1-249-405-11	CARBON	100	5%	1/4W	
R288	1-249-424-11	CARBON	3.9K	5%	1/4W	
R289	1-216-482-11	METAL OXIDE	1.8K	5%	3W	F
R292	1-249-421-11	CARBON	2.2K	5%	1/4W	
R293	1-249-425-11	CARBON	3.3K	5%	1/4W	
R294	1-249-423-11	CARBON	3.3K	5%	1/4W	
R295	1-249-423-11	CARBON	3.3K	5%	1/4W	
R297	1-249-429-11	CARBON	10K	5%	1/4W	
R301	1-249-429-11	CARBON	10K	5%	1/4W	
R330	1-249-411-11	CARBON	330	5%	1/4W	
R332	1-249-417-11	CARBON	1K	5%	1/4W	
R333	1-249-421-11	CARBON	2.2K	5%	1/4W	
R334	1-249-411-11	CARBON	330	5%	1/4W	
R335	1-249-421-11	CARBON	2.2K	5%	1/4W	
R336	1-249-411-11	CARBON	330	5%	1/4W	
R337	1-249-421-11	CARBON	2.2K	5%	1/4W	
R338	1-249-411-11	CARBON	330	5%	1/4W	
R339	1-249-419-11	CARBON	1.5K	5%	1/4W	
R340	1-249-418-11	CARBON	1.2K	5%	1/4W	
R399	1-249-413-11	CARBON	680	5%	1/4W	
R502	⚠1-215-921-91	METAL OXIDE	4.7K	5%	3W	F
R503	1-216-446-00	METAL OXIDE	18	5%	2W	F
R504	1-216-868-00	METAL OXIDE	680	5%	1W	F
R505	1-249-429-11	CARBON	10K	5%	1/4W	F
R506	1-249-423-11	CARBON	3.3K	5%	1/4W	
R508	1-249-434-11	CARBON	27K	5%	1/4W	
R510	⚠1-249-417-91	CARBON	1K	5%	1/4W	F
R511	⚠1-247-891-91	CARBON	1K	5%	1/4W	
R512	⚠1-215-900-91	METAL OXIDE	22K	5%	2W	F
R513	1-260-099-91	CARBON	1K	5%	1/2W	
R514	1-247-895-00	CARBON	470K	5%	1/4W	
R515	1-249-421-11	CARBON	2.2K	5%	1/4W	
R516	1-249-422-11	CARBON	2.7K	5%	1/4W	
R522	1-249-411-11	CARBON	330	5%	1/4W	
R525	1-249-385-11	CARBON	2.2	5%	1/4W	F
R526	1-249-385-11	CARBON	2.2	5%	1/4W	F
R527	1-249-385-11	CARBON	2.2	5%	1/4W	F
R551	1-249-405-11	CARBON	100	5%	1/4W	
R552	1-215-423-00	METAL	1.2K	1%	1/6W	
R553	1-249-417-11	CARBON	1K	5%	1/4W	
R554	1-215-375-00	METAL	12	1%	1/6W	
R555	1-215-375-00	METAL	12	1%	1/6W	
R556	1-215-375-00	METAL	12	1%	1/6W	
R557	1-215-445-00	METAL	10K	1%	1/6W	
R558	1-215-445-00	METAL	10K	1%	1/6W	
R559	1-215-445-00	METAL	10K	1%	1/6W	
R560	1-249-405-11	CARBON	100	5%	1/4W	
R561	1-215-445-00	METAL	10K	1%	1/6W	
R562	1-215-423-00	METAL	1.2K	1%	1/6W	
R563	1-215-375-00	METAL	12	1%	1/6W	
R564	1-215-375-00	METAL	12	1%	1/6W	
R565	1-215-375-00	METAL	12	1%	1/6W	
R566	1-215-445-00	METAL	10K	1%	1/6W	
R567	1-215-445-00	METAL	10K	1%	1/6W	
R568	1-215-445-00	METAL	10K	1%	1/6W	
R569	1-249-417-11	CARBON	1K	5%	1/4W	
R570	1-215-423-00	METAL	1.2K	1%	1/6W	
R571	1-215-375-00	METAL	12	1%	1/6W	
R572	1-215-375-00	METAL	12	1%	1/6W	
R573	1-215-375-00	METAL	12	1%	1/6W	
R574	1-215-445-00	METAL	10K	1%	1/6W	
R575	1-215-445-00	METAL	10K	1%	1/6W	
R576	1-215-445-00	METAL	10K	1%	1/6W	
R577	1-249-417-11	CARBON	1K	5%	1/4W	
R578	1-215-445-00	METAL	10K	1%	1/6W	
R579	1-215-445-00	METAL	10K	1%	1/6W	
R581	1-249-441-11	CARBON	100K	5%	1/4W	
R582	1-260-099-91	CARBON	1K	5%	1/2W	
R583	1-249-433-11	CARBON	22K	5%	1/4W	
R585	1-249-425-11	CARBON	4.7K	5%	1/4W	
R588	1-249-429-11	CARBON	10K	5%	1/4W	
R589	1-249-432-11	CARBON	18K	5%	1/4W	
R591	1-260-087-91	CARBON	100	5%	1/2W	
R592	1-249-405-11	CARBON	100	5%	1/4W	
R593	1-249-417-11	CARBON	1K	5%	1/4W	
R596	⚠1-249-377-91	CARBON	0.47	5%	1/4W	F
R596	⚠1-249-377-91	CARBON	0.47	5%	1/4W	F
R651	⚠1-202-729-91	SOLID	6.8M	10%	1/2W	
R652	⚠1-202-723-91	SOLID	2.2M	10%	1/2W	
R654	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R655	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R657	1-249-417-11	CARBON	1K	5%	1/4W	F
R658	1-215-865-11	METAL OXIDE	220	5%	1W	F
R659	1-249-421-11	CARBON	2.2K	5%	1/4W	
R901	⚠1-249-405-91	CARBON	100	5%	1/4W	F
R902	1-247-887-00	CARBON	220K	5%	1/4W	
R903	1-249-441-11	CARBON	100K	5%	1/4W	
R904	1-249-441-11	CARBON	100K	5%	1/4W	
R905	1-249-433-11	CARBON	22K	5%	1/4W	
R906	1-249-441-11	CARBON	100K	5%	1/4W	
R907	1-249-433-11	CARBON	22K	5%	1/4W	
R908	1-249-407-11	CARBON	150	5%	1/4W	
R909	1-249-426-11	CARBON	5.6K	5%	1/4W	
R910	1-249-422-11	CARBON	2.7K	5%	1/4W	
R911	1-249-389-11	CARBON	4.7	5%	1/4W	
R912	1-249-426-11	CARBON	5.6K	5%	1/4W	
R913	1-249-422-11	CARBON	2.7K	5%	1/4W	
R914	1-249-407-11	CARBON	150	5%	1/4W	
R915	1-249-389-11	CARBON	4.7	5%	1/4W	
R916	1-249-411-11	CARBON	330	5%	1/4W	
R917	⚠1-247-823-91	CARBON	470	5%	1/4W	
R918	1-260-093-91	CARBON	330	5%	1/2W	
R919	1-249-411-11	CARBON	330	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R920	1-249-411-11	CARBON	330	5%	1/4W	
R921	1-249-441-11	CARBON	100K	5%	1/4W	
R922	1-249-418-11	CARBON	1.2K	5%	1/4W	
R923	1-215-916-00	METAL OXIDE	680	5%	3W	F
R924	1-215-888-00	METAL OXIDE	220	5%	2W	F
R925	1-215-888-00	METAL OXIDE	220	5%	2W	F
R926	1-202-838-00	SOLID	100K	10%	1/2W	
R927	1-249-437-11	CARBON	47K	5%	1/4W	
R928	1-249-441-11	CARBON	100K	5%	1/4W	
R929	1-249-429-11	CARBON	10K	5%	1/4W	
R931	1-249-441-11	CARBON	100K	5%	1/4W	
R932	1-216-351-00	METAL OXIDE	1.5	5%	1W	F
R933	1-249-413-11	CARBON	470	5%	1/4W	

<VARIABLE RESISTOR>

RV101	1-238-015-11	RES, ADJ, CARBON	4.7K			
RV102	1-238-011-11	RES, ADJ, CARBON	470			
RV201	1-238-011-11	RES, ADJ, CARBON	470			
RV202	1-238-016-11	RES, ADJ, CARBON	10K			
RV203	1-238-020-11	RES, ADJ, CARBON	100K			
RV204	1-238-020-11	RES, ADJ, CARBON	100K			
RV205	1-238-013-11	RES, ADJ, CARBON	2.2K			
RV206	1-238-013-11	RES, ADJ, CARBON	2.2K			
RV901	1-238-016-11	RES, ADJ, CARBON	10K			
RV902	1-238-016-11	RES, ADJ, CARBON	10K			

<RELAY>

RY651	A1-515-579-11	RELAY	
RY901	1-515-533-11	RELAY	

<TRANSFORMER>

T001	1-404-538-11	COIL	
T501	A1-499-320-12	TRANSFORMER, FERRITE (HOT)	
T502	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE	
T651	A1-421-372-11	TRANSFORMER, FERRITE (LST)	
T652	A1-421-373-11	TRANSFORMER, FERRITE (LFT)	
T653	A1-448-762-11	TRANSFORMER, POWER	

<TUNER>

TU101	A1-463-771-21	TUNER, RT-VQ81 (2014)	

<CRYSTAL>

X001	1-567-192-11	OSCILLATOR, CERAMIC	
X201	1-567-505-11	OSCILLATOR, CRYSTAL	

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*A-1331-069-A CR BOARD, COMPLETE
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*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P		
*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P		
1-526-812-11	SOCKET, PICTURE TUBE		
1-556-880-81	LEAD ASSY, HIGH-VOLTAGE		
*1-564-508-11	PLUG, CONNECTOR 5P		
*1-564-509-11	PLUG, CONNECTOR 6P		
4-373-933-01	SHEET (TRANSISTOR), BN		

<CAPACITOR>

C701	1-101-006-00	CERAMIC	0.047MF		50V	
C702	1-136-165-00	FILM	0.1MF	5%	50V	
C704	A1-133-948-51	ELECT	22MF	20%	25CV	
C705	1-102-050-00	CERAMIC	0.01MF		500V	
C706	1-162-115-00	CERAMIC	330PF	10%	2KV	
C707	1-162-115-00	CERAMIC	330PF	10%	2KV	
C708	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C709	1-101-006-00	CERAMIC	0.047MF		50V	

<DIODE>

D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D705	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D707	8-719-110-36	DIODE RD13ES-B2

<COIL>

L701	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L702	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L703	1-408-429-00	INDUCTOR	470UH
L704	1-408-413-00	INDUCTOR	22UH

<NEON LAMP>

NL701	1-519-108-99	LAMP, NEON	
NL702	1-519-108-99	LAMP, NEON	

<TRANSISTOR>

Q701	8-729-119-80	TRANSISTOR 2SC2688-LK
Q702	8-729-255-12	TRANSISTOR 2SC2551-O
Q703	8-729-200-17	TRANSISTOR 2SA1091-O
Q704	8-729-200-17	TRANSISTOR 2SA1091-O

<RESISTOR>

R701	1-249-405-11	CARBON	100	5%	1/4W	F
R703	A1-249-405-91	CARBON	100	5%	1/4W	F
R704	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R705	1-215-431-00	METAL	2.7K	1%	1/6W	
R706	1-216-510-11	METAL OXIDE	8.2K	5%	5W	F
	*4-341-751-01	BYELET; R706				
R707	1-247-700-11	CARBON	100	5%	1/4W	F
R708	1-202-561-00	SOLID	330	10%	1/2W	
R709	1-202-828-11	SOLID	6.8K	10%	1/2W	
R710	1-202-842-11	SOLID	220K	10%	1/2W	
R711	1-202-847-00	SOLID	560K	10%	1/2W	
R712	1-202-814-11	SOLID	33K	10%	1/2W	
R713	A1-249-421-91	CARBON	2.2K	5%	1/4W	
R714	1-202-818-00	SOLID	1K	10%	1/2W	

<SPARK GAP>

SG701	1-519-063-99	DISCHARGING GAP	
SG702	1-519-063-99	DISCHARGING GAP	

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*A-1331-070-A CG BOARD, COMPLETE
****

*I-508-765-00 PIN, CONNECTOR (5MM PITCH) 3P

CG | CB

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*1-508-706-00	PIN, CONNECTOR (5MM PITCH) 2P			
	1-526-812-11	SOCKET, PICTURE TUBE			
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE			
	*1-564-508-11	PLUG, CONNECTOR 5P			
	*1-564-509-11	PLUG, CONNECTOR 6P			
	4-373-933-01	SHEET (TRANSISTOR), BN			
		<CAPACITOR>			
C721	1-101-006-00	CERAMIC	0.047MF		50V
C722	1-136-165-00	FILM	0.1MF	5%	50V
C724	A1-123-948-51	ELECT	22MF	20%	250V
C725	1-102-050-00	CERAMIC	0.01MF		500V
C726	1-162-115-00	CERAMIC	330PF	10%	2KV
C727	1-162-115-00	CERAMIC	330PF	10%	2KV
C728	1-130-479-00	MYLAR	0.0047MF	5%	50V
C729	1-101-006-00	CERAMIC	0.047MF		50V
		<DIODE>			
D721	8-719-911-19	DIODE 1SS119			
D722	8-719-911-19	DIODE 1SS119			
D723	8-719-911-19	DIODE 1SS119			
D724	8-719-911-19	DIODE 1SS119			
D725	8-719-911-19	DIODE 1SS119			
D726	8-719-911-19	DIODE 1SS119			
D727	8-719-110-36	DIODE RD13ES-B2			
		<COIL>			
L721	1-408-159-00	COIL, SPOOK CHOKE 3.3UH			
L722	1-408-159-00	COIL, SPOOK CHOKE 3.3UH			
L723	1-408-429-00	INDUCTOR	470UH		
L724	1-408-413-00	INDUCTOR	22UH		
		<NEON LAMP>			
NL721	1-519-108-99	LAMP, NEON			
NL722	1-519-108-99	LAMP, NEON			
		<TRANSISTOR>			
Q721	8-729-119-80	TRANSISTOR 2SC2688-LK			
Q722	8-729-255-12	TRANSISTOR 2SC2551-O			
Q723	8-729-200-17	TRANSISTOR 2SA1091-O			
Q724	8-729-200-17	TRANSISTOR 2SA1091-O			
		<RESISTOR>			
R721	1-249-405-11	CARBON	100	5%	1/4W F
R723	A1-249-405-91	CARBON	100	5%	1/4W F
R724	1-215-927-00	METAL OXIDE	47K	5%	3W F
R725	1-215-431-00	METAL	2.7K	1%	1/6W
R726	1-216-510-11	METAL OXIDE	8.2K	5%	5W F
	*4-341-751-01	EYELET; R726			
R727	1-247-700-11	CARBON	100	5%	1/4W F
R728	1-202-561-00	SOLID	330	10%	1/2W
R729	1-202-828-11	SOLID	6.8K	10%	1/2W
R730	1-202-842-11	SOLID	220K	10%	1/2W
R731	1-202-847-00	SOLID	560K	10%	1/2W
R732	1-202-814-11	SOLID	33K	10%	1/2W
R733	A1-249-405-91	CARBON	2.2K	5%	1/4W
R734	1-202-818-00	SOLID	1K	10%	1/2W

REF.NO.	PART NO.	DESCRIPTION			REMARK
		<SPARK GAP>			
SG721	1-519-063-99	DISCHARGING GAP			
SG722	1-519-063-99	DISCHARGING GAP			
		**********			
	*A-1331-671-A	CB BOARD, COMPLETE			
		**********			
	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
	*1-508-706-00	PIN, CONNECTOR (5MM PITCH) 2P			
	1-526-812-11	SOCKET, PICTURE TUBE			
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE			
	*1-564-508-11	PLUG, CONNECTOR 5P			
	*1-564-509-11	PLUG, CONNECTOR 6P			
	4-373-933-01	SHEET (TRANSISTOR), BN			
		<CAPACITOR>			
C741	1-101-006-00	CERAMIC	0.047MF		50V
C742	1-136-165-00	FILM	0.1MF	5%	50V
C744	A1-123-948-51	ELECT	22MF	20%	250V
C745	1-102-050-00	CERAMIC	0.01MF		500V
C746	1-162-115-00	CERAMIC	330PF	10%	2KV
C747	1-162-115-00	CERAMIC	330PF	10%	2KV
C748	1-130-479-00	MYLAR	0.0047MF	5%	50V
C749	1-101-006-00	CERAMIC	0.047MF		50V
		<DIODE>			
D741	8-719-911-19	DIODE 1SS119			
D742	8-719-911-19	DIODE 1SS119			
D743	8-719-911-19	DIODE 1SS119			
D744	8-719-911-19	DIODE 1SS119			
D745	8-719-911-19	DIODE 1SS119			
D746	8-719-911-19	DIODE 1SS119			
D747	8-719-110-36	DIODE RD13ES-B2			
		<COIL>			
L741	1-408-159-00	COIL, SPOOK CHOKE 3.3UH			
L742	1-408-159-00	COIL, SPOOK CHOKE 3.3UH			
L743	1-408-429-00	INDUCTOR	470UH		
L744	1-408-413-00	INDUCTOR	22UH		
		<NEON LAMP>			
NL741	1-519-108-99	LAMP, NEON			
NL742	1-519-108-99	LAMP, NEON			
		<TRANSISTOR>			
Q741	8-729-119-80	TRANSISTOR 2SC2688-LK			
Q742	8-729-255-12	TRANSISTOR 2SC2551-O			
Q743	8-729-200-17	TRANSISTOR 2SA1091-O			
Q744	8-729-200-17	TRANSISTOR 2SA1091-O			
		<RESISTOR>			
R741	1-249-405-11	CARBON	100	5%	1/4W F
R743	A1-249-405-91	CARBON	100	5%	1/4W F
R744	1-215-927-00	METAL OXIDE	47K	5%	3W F
R745	1-215-431-00	METAL	2.7K	1%	1/6W
R746	1-216-510-11	METAL OXIDE	8.2K	5%	5W F
	*4-341-751-01	EYELET; R746			

CB | D

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R747	1-247-700-11	CARBON	100	5%	1/4W	F
R748	1-202-561-00	SOLID	330	10%	1/2W	
R749	1-202-828-11	SOLID	6.8K	10%	1/2W	
R750	1-202-842-11	SOLID	220K	10%	1/2W	
R751	1-202-847-00	SOLID	560K	10%	1/2W	
R752	1-202-814-11	SOLID	33K	10%	1/2W	
⚠R753	1-249-421-91	CARBON	2.2K	5%	1/4W	F
R754	1-202-818-00	SOLID	1K	10%	1/2W	
		<SPARK GAP>				
SG741	1-519-063-99	DISCHARGING GAP				
SG742	1-519-063-99	DISCHARGING GAP				
		**********				
	*A-1341-370-A	D BOARD, COMPLETE				
		**********				
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P				
	*1-564-506-11	PLUG, CONNECTOR 3P				
	*1-564-507-11	PLUG, CONNECTOR 4P				
	*1-564-508-11	PLUG, CONNECTOR 5P				
	*1-564-509-11	PLUG, CONNECTOR 6P				
	*1-564-510-11	PLUG, CONNECTOR 7P				
	*1-564-511-11	PLUG, CONNECTOR 8P				
	*4-381-904-01	SPRING (C)				
		<CAPACITOR>				
C301	1-101-810-00	CERAMIC	100PF	5%	500V	
C303	1-124-046-00	ELECT	10MF	20%	160V	
C304	1-106-367-00	MYLAR	0.01MF	10%	200V	
C305	1-102-244-00	CERAMIC	220PF	10%	500V	
C306	1-106-367-00	MYLAR	0.01MF	10%	200V	
C307	1-101-810-00	CERAMIC	100PF	5%	500V	
C308	1-124-798-11	ELECT	1MF	20%	160V	
C309	1-124-477-11	ELECT	47MF	20%	16V	
C310	1-130-483-00	MYLAR	0.01MF	5%	50V	
C311	1-130-495-00	MYLAR	0.1MF	5%	50V	
C312	1-102-976-00	CERAMIC	180PF	5%	50V	
C313	1-102-980-00	CERAMIC	270PF	5%	50V	
C314	1-130-475-00	MYLAR	0.0022MF	5%	50V	
C315	1-124-477-11	ELECT	47MF	20%	16V	
C316	1-124-120-11	ELECT	220MF	20%	16V	
C318	1-123-935-00	ELECT	33MF	20%	160V	
C319	1-102-978-00	CERAMIC	220PF	5%	50V	
C320	1-102-824-00	CERAMIC	470PF	5%	50V	
C321	1-102-824-00	CERAMIC	470PF	5%	50V	
C322	1-101-361-00	CERAMIC	150PF	5%	50V	
C330	1-101-361-00	CERAMIC	150PF	5%	50V	
C401	1-124-907-11	ELECT	10MF	20%	50V	
C402	1-124-799-11	ELECT	2.2MF	20%	160V	
C403	1-130-483-00	MYLAR	0.01MF	5%	50V	
C404	1-102-316-00	CERAMIC	15PF	5%	500V	
C405	1-106-367-00	MYLAR	0.01MF	10%	200V	
C406	1-130-483-00	MYLAR	0.01MF	5%	50V	
C407	1-130-491-00	MYLAR	0.047MF	5%	50V	
C408	1-130-491-00	MYLAR	0.047MF	5%	50V	
C409	1-130-491-00	MYLAR	0.047MF	5%	50V	
C410	1-130-483-00	MYLAR	0.01MF	5%	50V	
C411	1-102-316-00	CERAMIC	15PF	5%	500V	
C412	1-130-483-00	MYLAR	0.01MF	5%	50V	
C413	1-106-367-00	MYLAR	0.01MF	10%	200V	
C416	1-102-316-00	CERAMIC	15PF	5%	500V	

REF.NO.	PART NO.	DESCRIPTION			
C417	1-106-367-00	MYLAR	0.01MF	10%	200V
C4401	1-124-907-11	ELECT	10MF	20%	50V
C4402	1-124-907-11	ELECT	10MF	20%	50V
C4403	1-126-233-11	ELECT	22MF	20%	25V
C4404	1-126-233-11	ELECT	22MF	20%	25V
C4405	1-124-907-11	ELECT	10MF	20%	50V
C4406	1-124-907-11	ELECT	10MF	20%	50V
C4407	1-124-927-11	ELECT	4.7MF	20%	50V
C4408	1-124-927-11	ELECT	4.7MF	20%	50V
C4409	1-124-907-11	ELECT	10MF	20%	50V
C4410	1-126-101-11	ELECT	100MF	20%	16V
C4411	1-102-114-00	CERAMIC	470PF	10%	50V
C4412	1-102-116-00	CERAMIC	680PF	10%	50V
C4413	1-102-114-00	CERAMIC	470PF	10%	50V
C4414	1-124-907-11	ELECT	10MF	20%	50V
C4415	1-101-006-00	CERAMIC	0.047MF		50V
C4416	1-124-907-11	ELECT	10MF	20%	50V
C4417	1-124-120-11	ELECT	220MF	20%	16V
C4418	1-124-477-11	ELECT	47MF	20%	16V
C4419	1-124-477-11	ELECT	47MF	20%	16V
C4420	1-101-006-00	CERAMIC	0.047MF		50V
C4421	1-124-902-00	ELECT	0.47MF	20%	50V
C4422	1-101-006-00	CERAMIC	0.047MF		50V
C4426	1-126-101-11	ELECT	100MF	20%	16V
C4427	1-124-902-00	ELECT	0.47MF	20%	50V
C4428	1-102-074-00	CERAMIC	0.001MF	10%	50V
C4429	1-124-907-11	ELECT	10MF	20%	50V
C4601	1-102-978-00	CERAMIC	220PF	5%	50V
C4602	1-102-978-00	CERAMIC	220PF	5%	50V
C4603	1-102-978-00	CERAMIC	220PF	5%	50V
C4604	1-124-907-11	ELECT	10MF	20%	50V
C5001	1-124-499-11	ELECT	1MF	20%	50V
C5002	1-102-973-00	CERAMIC	100PF	5%	50V
C5003	1-130-483-00	MYLAR	0.01MF	5%	50V
C5004	1-131-341-00	TANTALUM	0.1MF	20%	35V
C5005	1-124-927-11	ELECT	4.7MF	20%	50V
C5006	1-124-907-11	ELECT	10MF	20%	50V
C5007	1-124-903-11	ELECT	1MF	20%	50V
C5008	1-124-903-11	ELECT	1MF	20%	50V
C5009	1-126-233-11	ELECT	22MF	20%	25V
C5010	1-126-101-11	ELECT	100MF	20%	16V
C5011	1-130-471-00	MYLAR	0.001MF	5%	50V
C5012	1-126-233-11	ELECT	22MF	20%	25V
C5013	1-126-101-11	ELECT	100MF	20%	16V
C5014	1-130-471-00	MYLAR	0.001MF	5%	50V
C5015	1-124-120-11	ELECT	220MF	20%	25V
C5016	1-124-120-11	ELECT	220MF	20%	25V
C5017	1-102-963-00	CERAMIC	33PF	5%	50V
C5018	1-102-963-00	CERAMIC	33PF	5%	50V
C5019	1-102-114-00	CERAMIC	470PF	10%	50V
C5020	1-102-114-00	CERAMIC	470PF	10%	50V
C5021	1-102-963-00	CERAMIC	33PF	5%	50V
C5022	1-102-963-00	CERAMIC	33PF	5%	50V
C5023	1-102-114-00	CERAMIC	470PF	10%	50V
C5024	1-102-114-00	CERAMIC	470PF	10%	50V
C5025	1-102-963-00	CERAMIC	33PF	5%	50V
C5026	1-102-963-00	CERAMIC	33PF	5%	50V
C5027	1-102-114-00	CERAMIC	470PF	10%	50V
C5028	1-102-114-00	CERAMIC	470PF	10%	50V
C5029	1-124-477-11	ELECT	47MF	20%	16V
C5030	1-130-471-00	MYLAR	0.001MF	5%	50V
C5031	1-130-471-00	MYLAR	0.001MF	5%	50V
C5032	1-124-477-11	ELECT	47MF	20%	16V
C5033	1-102-973-00	CERAMIC	100PF	5%	50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D301	8-719-110-88	DIODE RD39ES-B2	
D302	8-719-110-88	DIODE RD39ES-B2	
D303	8-719-911-19	DIODE 1SS119	
D304	8-719-110-35	DIODE RD13ES-B1	
D305	8-719-110-30	DIODE RD12ES-B1	
D306	8-719-911-19	DIODE 1SS119	
D307	8-719-911-19	DIODE 1SS119	
D308	8-719-911-19	DIODE 1SS119	
D401	8-719-911-19	DIODE 1SS119	
D402	8-719-911-19	DIODE 1SS119	
D403	8-719-911-19	DIODE 1SS119	
D404	8-719-911-19	DIODE 1SS119	
D405	8-719-971-20	DIODE ERC38-06	
D406	8-719-911-19	DIODE 1SS119	
D407	8-719-911-19	DIODE 1SS119	
D408	8-719-911-19	DIODE 1SS119	
D4404	8-719-911-19	DIODE 1SS119	
D4405	8-719-911-19	DIODE 1SS119	
D4406	8-719-911-19	DIODE 1SS119	
D4407	8-719-911-19	DIODE 1SS119	
D4408	8-719-911-19	DIODE 1SS119	
D4409	8-719-911-19	DIODE 1SS119	
D4410	8-719-911-19	DIODE 1SS119	
D4411	8-719-911-19	DIODE 1SS119	
D4412	8-719-911-19	DIODE 1SS119	
D4413	8-719-911-19	DIODE 1SS119	
D4414	8-719-911-19	DIODE 1SS119	
D4417	8-719-911-19	DIODE 1SS119	
D4418	8-719-911-19	DIODE 1SS119	
D4428	8-719-911-19	DIODE 1SS119	
D4429	8-719-911-19	DIODE 1SS119	
		<IC>	
IC401	8-759-945-58	IC RC4558P	
IC402	8-759-945-58	IC RC4558P	
IC4401	8-759-945-58	IC RC4558P	
IC4402	8-759-945-58	IC RC4558P	
IC5001	8-752-033-68	IC CXA1268P	
IC5002	8-759-982-21	IC RC78L05A	
IC5003	8-759-982-44	IC RC79L05A	
IC5004	8-759-602-19	IC M5220L	
IC5005	8-759-602-19	IC M5220L	
IC5006	8-759-602-19	IC M5220L	
		<COIL>	
L301	1-410-470-11	INDUCTOR 10UH	
L302	1-410-470-11	INDUCTOR 10UH	
L303	1-408-421-00	INDUCTOR 100UH	
L304	1-410-468-11	INDUCTOR 6.8UH	
L305	1-410-468-11	INDUCTOR 6.8UH	
L5001	1-459-155-00	COIL (WITH CORE) 45UH	
L5002	1-459-155-00	COIL (WITH CORE) 45UH	
		<TRANSISTOR>	
Q301	8-729-122-03	TRANSISTOR 2SA1220A-P	
Q302	8-729-106-92	TRANSISTOR 2SC2690A-L	
Q303	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q305	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q306	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q308	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q309	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q310	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q311	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q312	8-729-106-92	TRANSISTOR 2SC2690A-Q	
Q313	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q401	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q403	8-729-238-32	TRANSISTOR 2SC2383-O	
Q404	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q405	8-729-111-67	TRANSISTOR 2SB1094-L	
Q406	8-729-238-32	TRANSISTOR 2SC2383-O	
Q407	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q408	8-729-111-67	TRANSISTOR 2SB1094-L	
Q409	8-729-238-32	TRANSISTOR 2SC2383-O	
Q410	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q411	8-729-111-67	TRANSISTOR 2SB1094-L	
Q4401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4403	8-729-801-46	TRANSISTOR 2SC3064-F	
Q4406	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4408	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4409	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4410	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4411	8-729-801-46	TRANSISTOR 2SC3064-F	
Q4413	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4414	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4416	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4417	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4418	8-729-801-46	TRANSISTOR 2SC3064-F	
Q4420	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4421	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4423	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4424	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4425	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4426	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4427	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4428	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4429	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4430	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4431	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4432	8-729-803-82	TRANSISTOR 2SC3468-E	
Q4433	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4434	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4435	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4436	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4437	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4438	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4439	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4440	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4441	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4442	8-729-900-89	TRANSISTOR DTC144ES	
Q4450	8-729-803-37	TRANSISTOR 2SA1237-F	
Q4501	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4502	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4503	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4505	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q5001	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q5002	8-729-111-67	TRANSISTOR 2SB1094-L	

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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q5003	8-729-231-60	TRANSISTOR 2SD1406-YGR				
Q5004	8-729-111-67	TRANSISTOR 2SB1094-L				
Q5005	8-729-231-60	TRANSISTOR 2SD1406-YGR				
Q5006	8-729-111-67	TRANSISTOR 2SB1094-L				
Q5007	8-729-231-60	TRANSISTOR 2SD1406-YGR				
Q5008	8-729-111-67	TRANSISTOR 2SB1094-L				
Q5009	8-729-231-60	TRANSISTOR 2SD1406-YGR				
Q5010	8-729-111-67	TRANSISTOR 2SB1094-L				
Q5011	8-729-231-60	TRANSISTOR 2SD1406-YGR				
Q5012	8-729-111-67	TRANSISTOR 2SB1094-L				
		<RESISTOR>				
R301	1-249-417-11	CARBON	1K	5%	1/4W	F
R302	1-249-393-11	CARBON	10	5%	1/4W	F
R303	1-249-405-11	CARBON	100	5%	1/4W	
R304	1-249-439-11	CARBON	68K	5%	1/4W	
R305	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-249-439-11	CARBON	68K	5%	1/4W	
R307	1-249-405-11	CARBON	100	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	F
R309	1-249-393-11	CARBON	10	5%	1/4W	F
R310	1-215-915-11	METAL OXIDE	470	5%	3W	F
R311	1-249-417-11	CARBON	1K	5%	1/4W	
R312	1-249-417-11	CARBON	1K	5%	1/4W	
R313	1-249-424-11	CARBON	3.9K	5%	1/4W	
R314	1-249-434-11	CARBON	27K	5%	1/4W	
R315	1-249-409-11	CARBON	220	5%	1/4W	
R316	1-249-422-11	CARBON	2.7K	5%	1/4W	
R317	1-249-414-11	CARBON	560	5%	1/4W	
R318	1-249-416-11	CARBON	820	5%	1/4W	
R319	1-249-409-11	CARBON	220	5%	1/4W	
R320	1-249-409-11	CARBON	220	5%	1/4W	
R321	1-249-409-11	CARBON	220	5%	1/4W	
R322	1-249-441-11	CARBON	100K	5%	1/4W	
R323	1-249-430-11	CARBON	12K	5%	1/4W	
R324	1-249-429-11	CARBON	10K	5%	1/4W	
R325	1-249-416-11	CARBON	820	5%	1/4W	
R326	A1-249-393-91	CARBON	10	5%	1/4W	F
R327	1-249-409-11	CARBON	220	5%	1/4W	
R328	1-249-393-11	CARBON	10	5%	1/4W	F
R329	1-249-429-11	CARBON	10K	5%	1/4W	
R330	1-216-429-00	METAL OXIDE	270	5%	1W	F
R331	1-216-440-00	METAL OXIDE	18K	5%	1W	F
R332	A1-215-915-51	METAL OXIDE	470	5%	3W	F
R333	1-215-877-11	METAL OXIDE	22K	5%	1W	F
R334	1-249-392-11	CARBON	8.2	5%	1/4W	F
R336	1-249-429-11	CARBON	10K	5%	1/4W	
R401	1-249-433-11	CARBON	22K	5%	1/4W	
R402	1-249-441-11	CARBON	100K	5%	1/4W	
R404	1-249-433-11	CARBON	22K	5%	1/4W	
R405	1-249-429-11	CARBON	10K	5%	1/4W	
R406	1-249-433-11	CARBON	22K	5%	1/4W	
R407	1-249-429-11	CARBON	10K	5%	1/4W	
R408	1-249-423-11	CARBON	3.3K	5%	1/4W	
R409	1-249-423-11	CARBON	3.3K	5%	1/4W	
R410	1-249-405-11	CARBON	100	5%	1/4W	F
R411	1-205-941-11	WIREWOUND	8.2K	10%	7W	
	*4-341-751-01	EYELET; R411				
R412	1-216-512-11	METAL OXIDE	18K	5%	5W	F
R413	1-215-445-00	METAL	10K	1%	1/6W	
R414	1-215-418-00	METAL	750	1%	1/6W	
R415	1-249-393-11	CARBON	10	5%	1/4W	F
R416	1-215-875-11	METAL OXIDE	10K	5%	1W	F

REF.NO.	PART NO.	DESCRIPTION				REMARK
R417	1-249-405-11	CARBON	100	5%	1/4W	F
R418	1-249-429-11	CARBON	10K	5%	1/4W	
R419	1-215-441-00	METAL	6.8K	1%	1/6W	
R420	1-215-453-00	METAL	22K	1%	1/6W	
R421	1-215-461-00	METAL	47K	1%	1/6W	
R422	1-215-425-00	METAL	1.5K	1%	1/6W	
R423	1-215-441-00	METAL	6.8K	1%	1/6W	
R424	1-215-425-00	METAL	1.5K	1%	1/6W	
R425	1-215-425-00	METAL	1.5K	1%	1/6W	
R426	A1-249-405-91	CARBON	100	5%	1/4W	F
R427	1-216-512-11	METAL OXIDE	18K	5%	5W	F
R428	1-215-445-00	METAL	10K	1%	1/6W	
R429	1-215-418-00	METAL	750	1%	1/6W	
R430	A1-249-393-91	CARBON	10	5%	1/4W	F
R431	A1-249-405-91	CARBON	100	5%	1/4W	F
R432	1-249-429-11	CARBON	10K	5%	1/4W	
R433	1-215-441-00	METAL	6.8K	1%	1/6W	
R434	1-249-429-11	CARBON	10K	5%	1/4W	
R435	1-215-441-00	METAL	6.8K	1%	1/6W	
R436	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R438	1-216-512-11	METAL OXIDE	18K	5%	5W	F
R439	1-215-445-00	METAL	10K	1%	1/6W	
R440	1-215-418-00	METAL	750	1%	1/6W	
R441	1-249-393-11	CARBON	10	5%	1/4W	F
R442	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R443	1-249-480-11	CARBON	3.3	5%	1/2W	
R444	1-249-480-11	CARBON	3.3	5%	1/2W	
R449	1-249-480-11	CARBON	3.3	5%	1/2W	
R450	1-249-480-11	CARBON	3.3	5%	1/2W	
R451	1-205-941-11	WIREWOUND	8.2K	10%	7W	
	*4-341-751-01	EYELET; R451				
R455	1-249-480-11	CARBON	3.3	5%	1/2W	
R456	1-249-460-11	CARBON	3.3	5%	1/2W	
R4401	1-249-437-11	CARBON	47K	5%	1/4W	
R4402	1-249-423-11	CARBON	3.3K	5%	1/4W	
R4403	1-249-429-11	CARBON	10K	5%	1/4W	
R4404	1-249-429-11	CARBON	10K	5%	1/4W	
R4405	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4406	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4407	1-249-423-11	CARBON	3.3K	5%	1/4W	
R4408	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4409	1-249-409-11	CARBON	220	5%	1/4W	
R4410	1-249-409-11	CARBON	220	5%	1/4W	
R4411	1-249-429-11	CARBON	10K	5%	1/4W	
R4412	1-249-409-11	CARBON	220	5%	1/4W	
R4413	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4414	1-249-414-11	CARBON	560	5%	1/4W	
R4415	1-249-411-11	CARBON	330	5%	1/4W	
R4416	1-249-423-11	CARBON	3.3K	5%	1/4W	
R4417	1-249-429-11	CARBON	10K	5%	1/4W	
R4418	1-249-423-11	CARBON	3.3K	5%	1/4W	
R4419	1-249-417-11	CARBON	1K	5%	1/4W	
R4420	1-249-417-11	CARBON	1K	5%	1/4W	
R4421	1-249-429-11	CARBON	10K	5%	1/4W	
R4422	1-249-429-11	CARBON	10K	5%	1/4W	
R4423	1-249-417-11	CARBON	1K	5%	1/4W	
R4424	1-249-417-11	CARBON	1K	5%	1/4W	
R4425	1-249-417-11	CARBON	1K	5%	1/4W	
R4426	1-249-417-11	CARBON	1K	5%	1/4W	
R4427	1-249-417-11	CARBON	1K	5%	1/4W	
R4428	1-249-409-11	CARBON	220	5%	1/4W	
R4429	1-249-409-11	CARBON	220	5%	1/4W	
R4430	1-249-409-11	CARBON	220	5%	1/4W	
R4431	1-249-414-11	CARBON	560	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R4432	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4433	1-249-411-11	CARBON	330	5%	1/4W	
R4434	1-249-409-11	CARBON	220	5%	1/4W	
R4435	1-249-409-11	CARBON	220	5%	1/4W	
R4436	1-249-409-11	CARBON	220	5%	1/4W	
R4437	1-249-414-11	CARBON	560	5%	1/4W	
R4438	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4439	1-249-411-11	CARBON	330	5%	1/4W	
R4440	1-249-405-11	CARBON	100	5%	1/4W	
R4441	1-215-425-00	METAL	1.5K	1%	1/6W	
R4442	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4443	1-249-405-11	CARBON	100	5%	1/4W	
R4444	1-249-401-11	CARBON	47	5%	1/4W	
R4445	1-215-413-00	METAL	470	1%	1/6W	
R4446	1-249-385-11	CARBON	2.2	5%	1/4W	
R4447	1-249-409-11	CARBON	220	5%	1/4W	
R4448	1-249-405-11	CARBON	100	5%	1/4W	
R4449	1-215-425-00	METAL	1.5K	1%	1/6W	
R4450	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4451	1-249-405-11	CARBON	100	5%	1/4W	
R4452	1-215-413-00	METAL	470	1%	1/6W	
R4453	1-249-385-11	CARBON	2.2	5%	1/4W	
R4454	1-249-401-11	CARBON	47	5%	1/4W	
R4455	1-215-405-00	METAL	220	1%	1/6W	
R4456	1-249-426-11	CARBON	5.6K	5%	1/4W	
R4457	1-215-461-00	METAL	47K	1%	1/6W	
R4471	1-249-437-11	CARBON	47K	5%	1/4W	
R4472	1-249-437-11	CARBON	47K	5%	1/4W	
R4473	1-215-469-00	METAL	100K	1%	1/6W	
R4474	1-215-461-00	METAL	47K	1%	1/6W	
R4475	1-215-469-00	METAL	100K	1%	1/6W	
R4476	1-215-461-00	METAL	47K	1%	1/6W	
R4477	1-215-469-00	METAL	100K	1%	1/6W	
R4478	1-215-461-00	METAL	47K	1%	1/6W	
R4479	1-215-469-00	METAL	100K	1%	1/6W	
R4480	1-249-419-11	CARBON	1.5K	5%	1/4W	
R4481	1-249-405-11	CARBON	100	5%	1/4W	
R4482	1-249-419-11	CARBON	1.5K	5%	1/4W	
R4483	1-215-449-00	METAL	15K	1%	1/6W	
R4484	1-215-453-00	METAL	22K	1%	1/6W	
R4485	1-215-445-00	METAL	10K	1%	1/6W	
R4486	1-249-432-11	CARBON	18K	5%	1/4W	
R4487	1-215-431-00	METAL	2.7K	1%	1/6W	
R4488	1-215-443-00	METAL	8.2K	1%	1/6W	
R4489	1-215-443-00	METAL	8.2K	1%	1/6W	
R4490	1-215-443-00	METAL	8.2K	1%	1/6W	
R4491	1-249-429-11	CARBON	10K	5%	1/4W	
R4492	1-247-887-00	CARBON	220K	5%	1/4W	
R4493	1-247-887-00	CARBON	220K	5%	1/4W	
R4494	1-247-887-00	CARBON	220K	5%	1/4W	
R4495	1-215-477-00	METAL	220K	1%	1/6W	
R4496	1-215-469-00	METAL	100K	1%	1/6W	
R4497	1-249-429-11	CARBON	10K	5%	1/4W	
R4499	1-249-405-11	CARBON	100	5%	1/4W	
R4500	1-249-441-11	CARBON	100K	5%	1/4W	
R4501	1-249-417-11	CARBON	1K	5%	1/4W	
R4502	1-249-414-11	CARBON	560	5%	1/4W	
R4510	1-249-423-11	CARBON	3.3K	5%	1/4W	
R4556	1-249-405-11	CARBON	100	5%	1/4W	
R4557	1-215-425-00	METAL	1.5K	1%	1/6W	
R4558	1-249-425-11	CARBON	4.7K	5%	1/4W	
R4559	1-249-405-11	CARBON	100	5%	1/4W	
R4560	1-249-401-11	CARBON	47	5%	1/4W	
R4561	1-215-413-00	METAL	470	1%	1/6W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R4562	1-249-394-11	CARBON	12	5%	1/4W	
R4564	1-249-429-11	CARBON	10K	5%	1/4W	
R4565	1-215-449-00	METAL	15K	1%	1/6W	
R4566	1-215-443-00	METAL	8.2K	1%	1/6W	
R4567	1-215-429-00	METAL	2.2K	1%	1/6W	
R4568	1-215-469-00	METAL	100K	1%	1/6W	
R4569	1-249-409-11	CARBON	220	5%	1/4W	
R4570	1-249-393-11	CARBON	10	5%	1/4W	
R4572	1-249-429-11	CARBON	10K	5%	1/4W	
R4574	1-247-895-00	CARBON	470K	5%	1/4W	
R4575	1-215-449-00	METAL	15K	1%	1/6W	
R4577	1-215-435-00	METAL	3.9K	1%	1/6W	
R4578	1-249-431-11	CARBON	15K	5%	1/4W	
R4579	1-249-429-11	CARBON	10K	5%	1/4W	
R4598	1-249-407-11	CARBON	150	5%	1/4W	
R4599	1-249-412-11	CARBON	390	5%	1/4W	
R4610	1-249-417-11	CARBON	1K	5%	1/4W	
R4611	1-249-424-11	CARBON	3.9K	5%	1/4W	
R4612	1-249-421-11	CARBON	2.2K	5%	1/4W	
R4613	1-249-421-11	CARBON	2.2K	5%	1/4W	
R4614	1-249-417-11	CARBON	1K	5%	1/4W	
R4618	1-249-417-11	CARBON	1K	5%	1/4W	
R4619	1-249-417-11	CARBON	1K	5%	1/4W	
R4621	1-249-416-11	CARBON	820	5%	1/4W	
R4622	1-249-419-11	CARBON	1.5K	5%	1/4W	
R4623	1-249-409-11	CARBON	220	5%	1/4W	
R5001	1-215-455-00	METAL	27K	1%	1/6W	
R5002	1-215-457-00	METAL	33K	1%	1/6W	
R5003	1-215-455-00	METAL	27K	1%	1/6W	
R5004	1-215-469-00	METAL	100K	1%	1/6W	
R5005	1-215-469-00	METAL	100K	1%	1/6W	
R5006	1-215-469-00	METAL	100K	1%	1/6W	
R5007	1-249-420-11	CARBON	1.8K	5%	1/4W	
R5008	1-215-441-00	METAL	6.8K	1%	1/6W	
R5009	1-215-427-00	METAL	1.8K	1%	1/6W	
R5010	1-215-453-00	METAL	22K	1%	1/6W	
R5011	1-215-439-00	METAL	5.6K	1%	1/6W	
R5012	1-215-453-00	METAL	22K	1%	1/6W	
R5013	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5014	1-215-451-00	METAL	18K	1%	1/6W	
R5015	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5016	1-249-441-11	CARBON	100K	5%	1/4W	
R5017	1-247-897-11	CARBON	560K	5%	1/4W	
R5018	1-249-441-11	CARBON	100K	5%	1/4W	
R5019	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5020	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5021	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5022	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5023	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5024	1-249-423-11	CARBON	3.3K	5%	1/4W	
R5025	1-215-439-00	METAL	5.6K	1%	1/6W	
R5026	1-215-459-00	METAL	39K	1%	1/6W	
R5027	1-215-439-00	METAL	5.6K	1%	1/6W	
R5028	1-215-421-00	METAL	1K	1%	1/6W	
R5029	1-215-429-00	METAL	2.2K	1%	1/6W	
R5030	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5031	1-249-432-11	CARBON	18K	5%	1/4W	
R5032	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5033	1-249-429-11	CARBON	10K	5%	1/4W	
R5034	1-249-429-11	CARBON	10K	5%	1/4W	
R5035	1-249-429-11	CARBON	10K	5%	1/4W	
R5036	1-215-439-00	METAL	5.6K	1%	1/6W	
R5037	1-215-455-00	METAL	27K	1%	1/6W	

D

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R5038	1-215-439-00	METAL	5.6K	1%	1/6W	
R5039	1-215-423-00	METAL	1.2K	1%	1/6W	
R5040	1-215-409-00	METAL	330	1%	1/6W	
R5041	1-215-423-00	METAL	1.2K	1%	1/6W	
R5042	1-249-426-11	CARBON	5.6K	5%	1/4W	
R5043	1-249-426-11	CARBON	5.6K	5%	1/4W	
R5044	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5045	1-249-425-11	CARBON	4.7K	5%	1/4W	
R5046	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5047	1-249-425-11	CARBON	4.7K	5%	1/4W	
R5048	1-249-426-11	CARBON	5.6K	5%	1/4W	
R5049	1-249-426-11	CARBON	5.6K	5%	1/4W	
R5050	1-249-426-11	CARBON	5.6K	5%	1/4W	
R5051	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5052	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5053	1-249-427-11	CARBON	6.8K	5%	1/4W	
R5054	1-215-453-00	METAL	22K	1%	1/6W	
R5055	1-215-453-00	METAL	22K	1%	1/6W	
R5057	1-215-467-00	METAL	82K	1%	1/6W	
R5058	1-215-433-00	METAL	3.3K	1%	1/6W	
R5059	1-249-437-11	CARBON	47K	5%	1/4W	
R5060	1-249-437-11	CARBON	47K	5%	1/4W	
R5061	1-247-891-00	CARBON	330K	5%	1/4W	
R5062	1-247-891-00	CARBON	330K	5%	1/4W	
R5063	1-215-421-00	METAL	1K	1%	1/6W	
R5064	1-215-437-00	METAL	4.7K	1%	1/6W	
R5065	1-215-469-00	METAL	100K	1%	1/6W	
R5066	1-215-399-00	METAL	120	1%	1/6W	
R5067	1-215-399-00	METAL	120	1%	1/6W	
R5068	1-215-399-00	METAL	120	1%	1/6W	
R5069	1-215-399-00	METAL	120	1%	1/6W	
R5070	1-215-399-00	METAL	120	1%	1/6W	
R5071	1-215-399-00	METAL	120	1%	1/6W	
R5072	1-215-399-00	METAL	120	1%	1/6W	
R5073	1-215-399-00	METAL	120	1%	1/6W	
R5074	1-215-399-00	METAL	120	1%	1/6W	
R5075	1-215-399-00	METAL	120	1%	1/6W	
R5076	1-215-399-00	METAL	120	1%	1/6W	
R5077	1-215-399-00	METAL	120	1%	1/6W	
R5078	1-215-421-00	METAL	1K	1%	1/6W	
R5079	1-215-421-00	METAL	1K	1%	1/6W	
R5080	1-249-405-11	CARBON	100	5%	1/4W	
R5081	1-249-405-11	CARBON	100	5%	1/4W	
R5082	1-249-405-11	CARBON	100	5%	1/4W	
R5083	1-249-405-11	CARBON	100	5%	1/4W	
R5084	1-215-421-00	METAL	1K	1%	1/6W	
R5085	1-215-421-00	METAL	1K	1%	1/6W	
R5086	1-247-736-11	CARBON	56	5%	1/2W	
R5087	1-247-736-11	CARBON	56	5%	1/2W	
R5088	1-214-792-00	METAL	1	1%	1/2W	
R5089	1-214-792-00	METAL	1	1%	1/2W	
R5090	1-215-421-00	METAL	1K	1%	1/6W	
R5091	1-215-421-00	METAL	1K	1%	1/6W	
R5092	1-249-405-11	CARBON	100	5%	1/4W	
R5093	1-249-405-11	CARBON	100	5%	1/4W	
R5094	1-249-405-11	CARBON	100	5%	1/4W	
R5095	1-249-405-11	CARBON	100	5%	1/4W	
R5096	1-215-421-00	METAL	1K	1%	1/6W	
R5097	1-215-421-00	METAL	1K	1%	1/6W	
R5098	1-247-736-11	CARBON	56	5%	1/2W	
R5099	1-247-736-11	CARBON	56	5%	1/2W	
R5100	1-214-792-00	METAL	1	1%	1/2W	
R5101	1-214-792-00	METAL	1	1%	1/2W	
R5102	1-215-421-00	METAL	1K	1%	1/6W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R5103	1-215-421-00	METAL	1K	1%	1/6W	
R5104	1-249-405-11	CARBON	100	5%	1/4W	
R5105	1-249-405-11	CARBON	100	5%	1/4W	
R5106	1-249-405-11	CARBON	100	5%	1/4W	
R5107	1-249-405-11	CARBON	100	5%	1/4W	
R5108	1-215-421-00	METAL	1K	1%	1/6W	
R5109	1-215-421-00	METAL	1K	1%	1/6W	
R5110	1-247-736-11	CARBON	56	5%	1/2W	
R5111	1-247-736-11	CARBON	56	5%	1/2W	
R5112	1-214-792-00	METAL	1	1%	1/2W	
R5113	1-214-792-00	METAL	1	1%	1/2W	
R5114	⚠1-216-475-51	METAL OXIDE	120	5%	3W	F
R5115	⚠1-216-475-51	METAL OXIDE	120	5%	3W	F
R5116	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5119	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5120	1-249-429-11	CARBON	10K	5%	1/4W	
R5121	1-249-429-11	CARBON	10K	5%	1/4W	
R5130	1-249-438-11	CARBON	56K	5%	1/4W	
R5131	1-249-438-11	CARBON	56K	5%	1/4W	
R5140	1-249-405-11	CARBON	100	5%	1/4W	
R5141	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5142	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5143	1-249-405-11	CARBON	100	5%	1/4W	
R5144	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5145	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5146	1-249-405-11	CARBON	100	5%	1/4W	
R5147	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5148	1-249-424-11	CARBON	3.9K	5%	1/4W	
R5151	⚠1-249-447-91	CARBON	0.56	5%	1/4W	F
R5152	⚠1-249-444-91	CARBON	0.56	5%	1/4W	F
R5153	⚠1-249-445-91	CARBON	0.68	5%	1/4W	F

<VARIABLE RESISTOR>

RV4407	1-238-015-11	RES, ADJ, CARBON	4.7K
RV4408	1-238-015-11	RES, ADJ, CARBON	4.7K
RV4409	1-238-015-11	RES, ADJ, CARBON	4.7K
RV4410	1-238-011-11	RES, ADJ, CARBON	470
RV4411	1-238-732-21	RES, ADJ, CARBON	100
RV4412	1-238-011-11	RES, ADJ, CARBON	470
RV4501	1-238-012-11	RES, ADJ, CARBON	1K
RV5001	1-238-017-11	RES, ADJ, CARBON	22K
RV5002	1-238-017-11	RES, ADJ, CARBON	22K
RV5003	1-238-017-11	RES, ADJ, CARBON	22K
RV5004	1-238-017-11	RES, ADJ, CARBON	22K
RV5005	1-238-017-11	RES, ADJ, CARBON	22K
RV5006	1-238-017-11	RES, ADJ, CARBON	22K
RV5007	1-238-017-11	RES, ADJ, CARBON	22K
RV5008	1-238-017-11	RES, ADJ, CARBON	22K
RV5009	1-238-017-11	RES, ADJ, CARBON	22K
RV5010	1-238-017-11	RES, ADJ, CARBON	22K
RV5011	1-238-014-11	RES, ADJ, CARBON	3.3K
RV5012	1-238-017-11	RES, ADJ, CARBON	22K
RV5013	1-238-016-11	RES, ADJ, CARBON	10K
RV5014	1-238-017-11	RES, ADJ, CARBON	22K
RV5015	1-238-016-11	RES, ADJ, CARBON	10K
RV5016	1-238-017-11	RES, ADJ, CARBON	22K
RV5017	1-238-023-11	RES, ADJ, CARBON	470K
RV5018	1-238-017-11	RES, ADJ, CARBON	22K
RV5019	1-238-017-11	RES, ADJ, CARBON	22K
RV5020	1-238-017-11	RES, ADJ, CARBON	22K
RV5021	1-238-017-11	RES, ADJ, CARBON	22K
RV5022	1-238-017-11	RES, ADJ, CARBON	22K
RV5023	1-238-017-11	RES, ADJ, CARBON	22K

D H

The components identified by shading and mark ⚠ are critical for safety.
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REF.NO.	PART NO.	DESCRIPTION	REMARK
RV5024	1-238-017-11	RES, ADJ, CARBON 22K	
RV5025	1-238-017-11	RES, ADJ, CARBON 22K	
RV5026	1-238-018-11	RES, ADJ, CARBON 33K	
RV5027	1-238-017-11	RES, ADJ, CARBON 22K	
RV5028	1-238-014-11	RES, ADJ, CARBON 3.3K	
RV5029	1-238-015-11	RES, ADJ, CARBON 4.7K	
RV5030	1-238-017-11	RES, ADJ, CARBON 22K	
RV5031	1-238-017-11	RES, ADJ, CARBON 22K	
RV5032	1-238-017-11	RES, ADJ, CARBON 22K	
RV5033	1-238-017-11	RES, ADJ, CARBON 22K	
RV5034	1-238-017-11	RES, ADJ, CARBON 22K	
RV5035	1-238-017-11	RES, ADJ, CARBON 22K	
RV5036	1-238-017-11	RES, ADJ, CARBON 22K	
RV5037	1-238-019-11	RES, ADJ, CARBON 47K	
RV5038	1-238-017-11	RES, ADJ, CARBON 22K	
RV5039	1-238-016-11	RES, ADJ, CARBON 10K	
RV5040	1-238-014-11	RES, ADJ, CARBON 3.3K	
RV5041	1-238-016-11	RES, ADJ, CARBON 10K	
RV5042	1-238-017-11	RES, ADJ, CARBON 22K	
RV5043	1-238-017-11	RES, ADJ, CARBON 22K	
RV5044	1-238-017-11	RES, ADJ, CARBON 22K	
RV5045	1-238-017-11	RES, ADJ, CARBON 22K	
RV5046	1-238-017-11	RES, ADJ, CARBON 22K	
RV5047	1-238-017-11	RES, ADJ, CARBON 22K	
RV5048	1-238-017-11	RES, ADJ, CARBON 22K	
RV5049	1-238-017-11	RES, ADJ, CARBON 22K	
RV5050	1-238-017-11	RES, ADJ, CARBON 22K	
RV5051	1-238-017-11	RES, ADJ, CARBON 22K	
RV5052	1-238-017-11	RES, ADJ, CARBON 22K	
RV5053	1-238-017-11	RES, ADJ, CARBON 22K	
RV5058	1-238-017-11	RES, ADJ, CARBON 22K	

<SWITCH>

S5001	1-570-865-11	SWITCH, SLIDE	

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	*1-625-921-11	H BOARD *******	
	*1-564-521-11	PLUG, CONNECTOR 6P	
	*1-564-523-11	PLUG, CONNECTOR 8P	
	*1-564-527-11	PLUG, CONNECTOR 12P	
	*4-374-421-01	HOLDER (A), LED	

<CAPACITOR>

C1001	1-102-110-00	CERAMIC	220PF	10%	50V
C1002	1-102-110-00	CERAMIC	220PF	10%	50V
C1003	1-130-483-00	MYLAR	0.01MF	5%	50V
C1004	1-130-483-00	MYLAR	0.01MF	5%	50V
C1005	1-130-483-00	MYLAR	0.01MF	5%	50V
C1006	1-131-381-00	TANTALUM	47MF	10%	10V
C1007	1-131-343-00	TANTALUM	0.22MF	10%	35V
C1008	1-124-589-11	ELECT	47MF	20%	10V
C1009	1-124-589-11	ELECT	47MF	20%	10V

<DIODE>

D1001	8-719-911-19	DIODE 1SS119
D1003	8-719-109-68	DIODE RD3.6ES-B1
D1004	8-719-911-19	DIODE 1SS119
D1005	8-719-911-19	DIODE 1SS119
D1006	8-719-915-45	DIODE SLP162B
D1007	8-719-911-19	DIODE 1SS119
D1008	8-719-915-45	DIODE SLP162B

<IC>

IC1001*8-759-630-17		IC MSO461-064SP
IC1002	8-741-148-33	IC SBX1483-59

<JACK>

J1001	1-563-303-11	JACK BLOCK, PIN 3P

<COIL>

L1001	1-408-421-00	INDUCTOR	100UH

<TRANSISTOR>

Q1002	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1004	8-729-119-76	TRANSISTOR 2SA1175-HFE

<RESISTOR>

R1001	1-249-425-11	CARBON	4.7K	5%	1/4W
R1002	1-249-418-11	CARBON	1.2K	5%	1/4W
R1006	1-249-417-11	CARBON	1K	5%	1/4W
R1007	1-249-441-11	CARBON	100K	5%	1/4W
R1008	1-249-421-11	CARBON	2.2K	5%	1/4W
R1009	1-249-437-11	CARBON	47K	5%	1/4W
R1010	1-249-441-11	CARBON	100K	5%	1/4W
R1020	1-249-417-11	CARBON	1K	5%	1/4W
R1021	1-249-417-11	CARBON	1K	5%	1/4W
R1022	1-249-417-11	CARBON	1K	5%	1/4W
R1023	1-249-417-11	CARBON	1K	5%	1/4W
R1024	1-247-713-11	CARBON	1K	5%	1/4W
R1025	1-249-417-11	CARBON	1K	5%	1/4W
R1026	1-247-713-11	CARBON	1K	5%	1/4W
R1027	1-249-409-11	CARBON	220	5%	1/4W

<VARIABLE RESISTOR>

RV1001	1-237-994-11	RES, VAR, CARBON 20K
RV1002	1-237-994-11	RES, VAR, CARBON 20K
RV1003	1-237-994-11	RES, VAR, CARBON 20K
RV1004	1-237-994-11	RES, VAR, CARBON 20K

<SWITCH>

S1001	1-554-303-21	SWITCH, KEY BOARD
S1002	1-554-303-21	SWITCH, KEY BOARD
S1003	1-554-303-21	SWITCH, KEY BOARD
S1004	1-554-303-21	SWITCH, KEY BOARD
S1009	1-554-303-21	SWITCH, KEY BOARD
S1017	*1-554-936-11	SWITCH, KEY BOARD(POWER)
S1018	1-570-865-11	SWITCH, SLIDE
S1019	1-570-865-11	SWITCH, SLIDE
S1020	1-570-865-11	SWITCH, SLIDE
S1021	1-570-865-11	SWITCH, SLIDE

<CRYSTAL>

X1001	1-527-476-00	OSCILLATOR, CERAMIC

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U

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1373-238-A	U BOARD, COMPLETE **********	
	*1-564-505-11	PLUG, CONNECTOR 2P	
	*1-564-507-11	PLUG, CONNECTOR 4P	
	*1-564-509-11	PLUG, CONNECTOR 6P	
	*1-564-510-11	PLUG, CONNECTOR 7P	
	*1-564-511-11	PLUG, CONNECTOR 8P	
	*1-565-425-11	PLUG, MINIATURE (L TYPE) 3P	
		<CAPACITOR>	
C8001	1-124-360-00	ELECT 1000MF 20% 16V	
C8100	1-124-360-00	ELECT 1000MF 20% 16V	
C8101	1-124-477-11	ELECT 47MF 20% 16V	
C8103	1-124-477-11	ELECT 47MF 20% 16V	
C8104	1-126-101-11	ELECT 100MF 20% 16V	
C8105	1-124-477-11	ELECT 47MF 20% 16V	
C8200	1-124-589-11	ELECT 47MF 20% 16V	
C8201	1-126-301-11	ELECT 1MF 20% 50V	
C8202	1-126-301-11	ELECT 1MF 20% 50V	
C8203	1-124-477-11	ELECT 47MF 20% 16V	
C8204	1-124-903-11	ELECT 1MF 20% 50V	
C8205	1-124-903-11	ELECT 1MF 20% 50V	
C8206	1-124-589-11	ELECT 47MF 20% 16V	
C8207	1-126-301-11	ELECT 1MF 20% 50V	
C8208	1-126-301-11	ELECT 1MF 20% 50V	
C8209	1-124-473-11	ELECT 1000MF 20% 10V	
C8210	1-124-589-11	ELECT 47MF 20% 16V	
C8211	1-124-589-11	ELECT 47MF 20% 16V	
C8212	1-126-301-11	ELECT 1MF 20% 50V	
C8213	1-126-301-11	ELECT 1MF 20% 50V	
C8300	1-124-360-00	ELECT 1000MF 20% 16V	
C8400	1-126-101-11	ELECT 100MF 20% 16V	
C8401	1-124-477-11	ELECT 47MF 20% 16V	
C8403	1-124-477-11	ELECT 47MF 20% 16V	
C8404	1-102-963-00	CERAMIC 33PF 5% 50V	
C8500	1-124-903-11	ELECT 1MF 20% 50V	
C8501	1-124-903-11	ELECT 1MF 20% 50V	
C8502	1-108-812-11	MYLAR 0.047MF 5% 50V	
C8503	1-124-907-11	ELECT 10MF 20% 50V	
C8504	1-130-483-00	MYLAR 0.01MF 5% 50V	
C8505	1-136-169-00	FILM 0.22MF 5% 50V	
C8506	1-136-169-00	FILM 0.22MF 5% 50V	
C8507	1-130-483-00	MYLAR 0.01MF 5% 50V	
C8508	1-124-907-11	ELECT 10MF 20% 50V	
C8509	1-124-907-11	ELECT 10MF 20% 50V	
C8510	1-124-119-00	ELECT 330MF 20% 16V	
C8511	1-126-101-11	ELECT 100MF 20% 16V	
C8512	1-124-902-00	ELECT 0.47MF 20% 50V	
C8513	1-124-465-00	ELECT 0.47MF 20% 50V	
C8514	1-124-907-11	ELECT 10MF 20% 50V	
C8515	1-124-907-11	ELECT 10MF 20% 50V	
C8516	1-124-477-11	ELECT 47MF 20% 16V	
C8521	1-124-478-11	ELECT 100MF 20% 25V	
C8522	1-126-103-11	ELECT 470MF 20% 16V	
C8523	1-124-477-11	ELECT 47MF 20% 16V	
C8600	1-130-483-00	MYLAR 0.01MF 5% 50V	
C8601	1-124-589-11	ELECT 47MF 20% 16V	
C8602	1-124-589-11	ELECT 47MF 20% 16V	
C8604	1-124-589-11	ELECT 47MF 20% 16V	
C8606	1-124-589-11	ELECT 47MF 20% 16V	
C8607	1-124-589-11	ELECT 47MF 20% 16V	
C8608	1-124-903-11	ELECT 1MF 20% 50V	
C8700	1-102-949-00	CERAMIC 12PF 5% 50V	
C8703	1-126-101-11	ELECT 100MF 20% 16V	
		<COMPOSITION CIRCUIT BLOCK>	
CP8501	1-231-619-00	COMPOSITION CIRCUIT BLOCK	
CP8502	1-231-619-00	COMPOSITION CIRCUIT BLOCK	
		<DIODE>	
D8100	8-719-911-19	DIODE 1SS119	
D8101	8-719-911-19	DIODE 1SS119	
D8102	8-719-911-19	DIODE 1SS119	
D8103	8-719-911-19	DIODE 1SS119	
D8104	8-719-911-19	DIODE 1SS119	
D8106	8-719-911-19	DIODE 1SS119	
D8200	8-719-110-36	DIODE RD13ES-B2	
D8201	8-719-110-36	DIODE RD13ES-B2	
D8202	8-719-109-88	DIODE RD5.6ES-B1	
D8203	8-719-110-36	DIODE RD13ES-B2	
D8204	8-719-110-17	DIODE RD10ES-B2	
D8205	8-719-110-17	DIODE RD10ES-B2	
D8206	8-719-110-36	DIODE RD13ES-B2	
D8207	8-719-110-36	DIODE RD13ES-B2	
D8208	8-719-110-17	DIODE RD10ES-B2	
D8209	8-719-110-17	DIODE RD10ES-B2	
D8210	8-719-110-17	DIODE RD10ES-B2	
D8211	8-719-110-17	DIODE RD10ES-B2	
D8212	8-719-110-36	DIODE RD13ES-B2	
D8213	8-719-110-36	DIODE RD13ES-B2	
D8214	8-719-110-36	DIODE RD13ES-B2	
D8400	8-719-911-19	DIODE 1SS119	
D8401	8-719-911-19	DIODE 1SS119	
D8500	8-719-911-19	DIODE 1SS119	
D8600	8-719-110-36	DIODE RD13ES-B2	
D8601	8-719-911-19	DIODE 1SS119	
D8602	8-719-110-36	DIODE RD13ES-B2	
D8603	8-719-911-19	DIODE 1SS119	
D8604	8-719-911-19	DIODE 1SS119	
D8605	8-719-911-19	DIODE 1SS119	
D8606	8-719-911-19	DIODE 1SS119	
		<IC>	
IC8100	8-759-000-49	IC MC14066BCP	
IC8400	8-752-037-04	IC CX-7948A	
IC8500	8-759-820-63	IC LA7953	
IC8501	8-759-000-48	IC MC14052BCP	
IC8503	8-759-008-71	IC LM324N	
IC8600	8-759-000-49	IC MC14066BCP	
IC8601	1-464-880-11	FILTER BLOCK, COM (CPB-2)	
		<JACK>	
J8200	1-565-166-11	PIN JACK BLOCK,(S) TERMINAL 3P	
J8201	1-563-305-11	JACK BLOCK, PIN 6P	
J8202	1-563-302-11	JACK BLOCK, PIN 2P	
		<TRANSISTOR>	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q105	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q106	8-729-119-76	TRANSISTOR 2SA1175-HFE	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q8001	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8002	8-729-900-89	TRANSISTOR DTC144ES	
Q8100	8-729-900-89	TRANSISTOR DTC144ES	
Q8101	8-729-900-89	TRANSISTOR DTC144ES	
Q8102	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8104	8-729-922-66	TRANSISTOR 2SC2410SN	
Q8105	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8107	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8108	8-729-900-89	TRANSISTOR DTC144ES	
Q8109	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8400	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8401	8-729-900-89	TRANSISTOR DTC144ES	
Q8402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8404	8-729-900-89	TRANSISTOR DTC144ES	
Q8500	8-729-900-89	TRANSISTOR DTC144ES	
Q8501	8-729-378-82	TRANSISTOR 2SD788-3	
Q8600	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8602	8-729-922-66	TRANSISTOR 2SC2410SN	
Q8603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8604	8-729-922-66	TRANSISTOR 2SC2410SN	
Q8605	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8607	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q8608	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8609	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8610	8-729-900-89	TRANSISTOR DTC144ES	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
R101	1-249-433-11	CARBON	22K	5% 1/4W	
R102	1-249-433-11	CARBON	22K	5% 1/4W	
R103	1-249-433-11	CARBON	22K	5% 1/4W	
R104	1-249-433-11	CARBON	22K	5% 1/4W	
R105	1-249-433-11	CARBON	22K	5% 1/4W	
R106	1-249-433-11	CARBON	22K	5% 1/4W	
R107	1-249-433-11	CARBON	22K	5% 1/4W	
R108	1-249-433-11	CARBON	22K	5% 1/4W	
R8001	1-249-405-11	CARBON	100	5% 1/4W	
R8004	1-249-421-11	CARBON	2.2K	5% 1/4W	
R8005	1-249-401-11	CARBON	47	5% 1/4W	
R8006	1-247-696-11	CARBON	47	5% 1/4W	
R8100	1-249-405-11	CARBON	100	5% 1/4W	
R8101	1-249-429-11	CARBON	10K	5% 1/4W	
R8102	1-249-437-11	CARBON	47K	5% 1/4W	
R8103	1-249-429-11	CARBON	10K	5% 1/4W	
R8104	1-249-441-11	CARBON	100K	5% 1/4W	
R8105	1-249-437-11	CARBON	47K	5% 1/4W	
R8106	1-249-441-11	CARBON	100K	5% 1/4W	
R8107	1-249-429-11	CARBON	10K	5% 1/4W	
R8108	1-249-441-11	CARBON	100K	5% 1/4W	
R8109	1-249-441-11	CARBON	100K	5% 1/4W	
R8110	1-249-423-11	CARBON	3.3K	5% 1/4W	
R8111	1-249-419-11	CARBON	1.5K	5% 1/4W	
R8112	1-215-406-00	METAL	240	1% 1/6W	
R8113	1-215-397-00	METAL	100	1% 1/6W	
R8114	1-215-415-00	METAL	560	1% 1/6W	
R8115	1-249-429-11	CARBON	10K	5% 1/4W	
R8116	1-249-423-11	CARBON	3.3K	5% 1/4W	
R8117	1-249-417-11	CARBON	1K	5% 1/4W	
R8118	1-249-417-11	CARBON	1K	5% 1/4W	
R8119	1-249-417-11	CARBON	1K	5% 1/4W	
R8120	1-249-423-11	CARBON	3.3K	5% 1/4W	
R8121	1-249-415-11	CARBON	680	5% 1/4W	
R8122	1-249-415-11	CARBON	680	5% 1/4W	
R8123	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8124	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8125	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8126	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8127	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8128	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8129	1-247-895-00	CARBON	470K	5% 1/4W	
R8130	1-249-405-11	CARBON	100	5% 1/4W	
R8131	1-249-405-11	CARBON	100	5% 1/4W	
R8132	1-249-397-11	CARBON	22	5% 1/4W	
R8133	1-249-405-11	CARBON	100	5% 1/4W	
R8134	1-249-409-11	CARBON	220	5% 1/4W	
R8200	1-249-404-00	CARBON	82	5% 1/4W	
R8201	1-249-417-11	CARBON	1K	5% 1/4W	
R8202	1-247-895-00	CARBON	470K	5% 1/4W	
R8203	1-249-417-11	CARBON	1K	5% 1/4W	
R8204	1-247-895-00	CARBON	470K	5% 1/4W	
R8205	1-249-404-00	CARBON	82	5% 1/4W	
R8206	1-249-417-11	CARBON	1K	5% 1/4W	
R8207	1-247-895-00	CARBON	470K	5% 1/4W	
R8208	1-249-417-11	CARBON	1K	5% 1/4W	
R8209	1-247-895-00	CARBON	470K	5% 1/4W	
R8210	1-249-417-11	CARBON	1K	5% 1/4W	
R8211	1-249-404-00	CARBON	82	5% 1/4W	
R8212	1-249-417-11	CARBON	1K	5% 1/4W	
R8213	1-247-895-00	CARBON	470K	5% 1/4W	
R8214	1-249-417-11	CARBON	1K	5% 1/4W	
R8215	1-247-895-00	CARBON	470K	5% 1/4W	
R8216	1-249-403-11	CARBON	68	5% 1/4W	
R8217	1-249-416-11	CARBON	820	5% 1/4W	
R8218	1-249-417-11	CARBON	1K	5% 1/4W	
R8219	1-249-437-11	CARBON	47K	5% 1/4W	
R8220	1-249-417-11	CARBON	1K	5% 1/4W	
R8221	1-249-437-11	CARBON	47K	5% 1/4W	
R8222	1-249-417-11	CARBON	1K	5% 1/4W	
R8223	1-249-437-11	CARBON	47K	5% 1/4W	
R8224	1-249-417-11	CARBON	1K	5% 1/4W	
R8225	1-249-437-11	CARBON	47K	5% 1/4W	
R8328	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8329	1-249-420-11	CARBON	1.8K	5% 1/4W	
R8400	1-249-421-11	CARBON	2.2K	5% 1/4W	
R8401	1-249-413-11	CARBON	470	5% 1/4W	
R8402	1-249-417-11	CARBON	1K	5% 1/4W	
R8403	1-249-425-11	CARBON	4.7K	5% 1/4W	
R8404	1-249-423-11	CARBON	3.3K	5% 1/4W	
R8405	1-247-903-00	CARBON	1M	5% 1/4W	
R8406	1-249-405-11	CARBON	100	5% 1/4W	
R8407	1-249-421-11	CARBON	2.2K	5% 1/4W	
R8408	1-249-432-11	CARBON	18K	5% 1/4W	
R8409	1-249-429-11	CARBON	10K	5% 1/4W	
R8410	1-249-429-11	CARBON	10K	5% 1/4W	
R8411	1-249-441-11	CARBON	100K	5% 1/4W	
R8412	1-249-401-11	CARBON	47	5% 1/4W	
R8413	1-249-421-11	CARBON	2.2K	5% 1/4W	
R8500	1-249-417-11	CARBON	1K	5% 1/4W	
R8501	1-249-417-11	CARBON	1K	5% 1/4W	
R8502	1-249-426-11	CARBON	5.6K	5% 1/4W	
R8503	1-249-426-11	CARBON	5.6K	5% 1/4W	
R8504	1-249-426-11	CARBON	5.6K	5% 1/4W	
R8505	1-249-426-11	CARBON	5.6K	5% 1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

U | XR | XG | XB | YR | YG

REF.NO.	PART NO.	DESCRIPTION				REMARK
R8506	1-249-417-11	CARBON	1K	5%	1/4W	
R8507	1-247-887-00	CARBON	220K	5%	1/4W	
R8508	1-249-422-11	CARBON	2.7K	5%	1/4W	
R8509	1-249-441-11	CARBON	100K	5%	1/4W	
R8510	1-249-441-11	CARBON	100K	5%	1/4W	
R8511	1-249-430-11	CARBON	12K	5%	1/4W	
R8512	1-249-430-11	CARBON	12K	5%	1/4W	
R8513	1-249-438-11	CARBON	56K	5%	1/4W	
R8514	1-249-433-11	CARBON	22K	5%	1/4W	
R8515	1-249-425-11	CARBON	4.7K	5%	1/4W	
R8516	1-249-431-11	CARBON	15K	5%	1/4W	
R8517	1-249-431-11	CARBON	15K	5%	1/4W	
R8518	1-249-438-11	CARBON	56K	5%	1/4W	
R8519	1-249-433-11	CARBON	22K	5%	1/4W	
R8520	1-249-425-11	CARBON	4.7K	5%	1/4W	
R8521	1-249-431-11	CARBON	15K	5%	1/4W	
R8522	1-249-431-11	CARBON	15K	5%	1/4W	
R8523	1-249-451-11	CARBON	15K	5%	1/4W	
R8524	1-249-431-11	CARBON	15K	5%	1/4W	
R8525	1-249-425-11	CARBON	4.7K	5%	1/4W	
R8526	1-249-425-11	CARBON	4.7K	5%	1/4W	
R8527	1-249-433-11	CARBON	22K	5%	1/4W	
R8528	1-249-433-11	CARBON	22K	5%	1/4W	
R8529	1-249-431-11	CARBON	15K	5%	1/4W	
R8530	1-249-431-11	CARBON	15K	5%	1/4W	
R8531	1-249-405-11	CARBON	100	5%	1/4W	
R8532	1-249-421-11	CARBON	2.2K	5%	1/4W	
R8533	1-249-421-11	CARBON	2.2K	5%	1/4W	
R8600	1-249-419-11	CARBON	470	5%	1/4W	
R8601	1-249-404-00	CARBON	82	5%	1/4W	
R8602	1-249-422-11	CARBON	2.7K	5%	1/4W	
R8603	1-249-419-11	CARBON	1.5K	5%	1/4W	
R8604	1-249-418-11	CARBON	1.2K	5%	1/4W	
R8605	1-215-406-00	METAL	240	1%	1/6W	
R8606	1-215-399-00	METAL	120	1%	1/6W	
R8607	1-215-415-00	METAL	560	1%	1/6W	
R8608	1-249-429-11	CARBON	10K	5%	1/4W	
R8609	1-249-422-11	CARBON	2.7K	5%	1/4W	
R8610	1-249-404-00	CARBON	82	5%	1/4W	
R8611	1-249-422-11	CARBON	2.7K	5%	1/4W	
R8612	1-249-419-11	CARBON	1.5K	5%	1/4W	
R8613	1-249-418-11	CARBON	1.2K	5%	1/4W	
R8614	1-215-406-00	METAL	240	1%	1/6W	
R8615	1-215-399-00	METAL	120	1%	1/6W	
R8616	1-215-415-00	METAL	560	1%	1/6W	
R8617	1-249-429-11	CARBON	10K	5%	1/4W	
R8618	1-249-422-11	CARBON	2.7K	5%	1/4W	
R8619	1-249-441-11	CARBON	100K	5%	1/4W	
R8620	1-249-441-11	CARBON	100K	5%	1/4W	
R8621	1-249-437-11	CARBON	47K	5%	1/4W	
R8622	1-249-405-11	CARBON	100	5%	1/4W	
R8623	1-247-895-00	CARBON	470K	5%	1/4W	
R8624	1-249-441-11	CARBON	100K	5%	1/4W	
R8625	1-249-418-11	CARBON	1.2K	5%	1/4W	
R8626	1-249-421-11	CARBON	2.2K	5%	1/4W	
R8627	1-249-405-11	CARBON	100	5%	1/4W	
R8628	1-249-405-11	CARBON	100	5%	1/4W	
R8629	1-249-405-11	CARBON	100	5%	1/4W	
R8630	1-249-413-11	CARBON	470	5%	1/4W	
R8632	1-249-401-11	CARBON	47	5%	1/4W	
R8633	1-249-401-11	CARBON	47	5%	1/4W	
R8634	1-249-405-11	CARBON	100	5%	1/4W	
R8635	1-249-421-11	CARBON	2.2K	5%	1/4W	
R8636	1-249-405-11	CARBON	100	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R8637	1-249-421-11	CARBON	2.2K	5%	1/4W	
R8640	1-249-418-11	CARBON	1.2K	5%	1/4W	
R8641	1-249-418-11	CARBON	1.2K	5%	1/4W	
R8800 ⚠	1-249-415-91	CARBON	680	5%	1/4W	
		<CRYSTAL>				
X8400	1-577-099-11	VIBRATOR, CERAMIC				
		**********				
	*1-625-929-11	XR BOARD ********				
		<CONNECTOR>				
XR1	*1-564-518-11	PLUG, CONNECTOR 3P				
XR2	*1-564-519-11	PLUG, CONNECTOR 4P				
		**********				
	*1-625-930-11	XG BOARD ********				
		<CONNECTOR>				
XG1	*1-564-518-11	PLUG, CONNECTOR 3P				
XG2	*1-564-519-11	PLUG, CONNECTOR 4P				
		**********				
	*1-625-931-11	XB BOARD ********				
		<CONNECTOR>				
XB2	*1-564-519-11	PLUG, CONNECTOR 4P				
		**********				
	*1-625-932-11	YR BOARD ********				
	*4-341-752-01	EYELET				
		<CAPACITOR>				
C1	1-162-115-00	CERAMIC	330PF	10%	2KV	
C2	1-162-115-00	CERAMIC	330PF	10%	2KV	
		<RESISTOR>				
R1	1-202-822-00	SOLID	2.2K	10%	1/2W	
R2	1-202-822-00	SOLID	2.2K	10%	1/2W	
R3	1-249-414-11	CARBON	560	5%	1/4W	
R4	1-249-414-11	CARBON	560	5%	1/4W	
		<CONNECTOR>				
YR1	*1-565-426-11	PLUG, MINIATURE (L TYPE) 4P				
YR2	*1-564-518-11	PLUG, CONNECTOR 3P				
		**********				
	*1-625-933-11	YG BOARD ********				
	*4-341-752-01	EYELET				

YG YB SX

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<CAPACITOR>				
C3	1-162-115-00	CERAMIC	330PF	10%	2KV	
C4	1-162-115-00	CERAMIC	330PF	10%	2KV	
		<RESISTOR>				
R5	1-202-822-00	SOLID	2.2K	10%	1/2W	
R6	1-202-822-00	SOLID	2.2K	10%	1/2W	
R7	1-249-414-11	CARBON	560	5%	1/4W	
R8	1-249-414-11	CARBON	560	5%	1/4W	
		<CONNECTOR>				
YG1	*1-565-426-11	PLUG, MINIATURE (L TYPE) 4P				
YG2	*1-564-518-11	PLUG, CONNECTOR 3P				
**********						
	*1-625-934-11	YB BOARD				
		********				
	*4-341-752-01	EYELET				
		<CAPACITOR>				
C5	1-162-115-00	CERAMIC	330PF	10%	2KV	
C6	1-162-115-00	CERAMIC	330PF	10%	2KV	
		<RESISTOR>				
R9	1-202-822-00	SOLID	2.2K	10%	1/2W	
R10	1-202-822-00	SOLID	2.2K	10%	1/2W	
R11	1-249-414-11	CARBON	560	5%	1/4W	
R12	1-249-414-11	CARBON	560	5%	1/4W	
		<CONNECTOR>				
YB1	*1-565-426-11	PLUG, MINIATURE (L TYPE) 4P				
YB2	*1-564-518-11	PLUG, CONNECTOR 3P				
**********						
	*A-1394-227-A	SX BOARD, COMPLETE				
		******************				
	*1-568-710-11	POST, BASE 24P				
		<CAPACITOR>				
C001	1-124-257-00	ELECT	2.2MF	20%	50V	
C002	1-124-257-00	ELECT	2.2MF	20%	50V	
C003	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V	
C004	1-163-138-00	CERAMIC CHIP	750PF	5%	50V	
C005	1-164-161-11	CERAMIC CHIP	0.0022MF	5%	50V	
C006	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C007	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C008	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C009	1-126-301-11	ELECT	1MF	20%	50V	
C010	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C011	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C012	1-163-020-00	CERAMIC CHIP	0.0082MF	5%	50V	
C013	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C014	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C015	1-165-133-00	CERAMIC CHIP	470PF	5%	50V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C017	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C018	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C019	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C020	1-163-809-11	CERAMIC CHIP	0.047MF	5%	25V	
C021	1-164-161-11	CERAMIC CHIP	0.0022MF	5%	50V	
C022	1-124-257-00	ELECT	2.2MF	20%	50V	
C023	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C024	1-130-491-00	MYLAR	0.047MF	5%	50V	
C025	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C026	1-130-491-00	MYLAR	0.047MF	5%	50V	
C027	1-136-177-00	FILM	1MF	5%	50V	
C028	1-163-809-11	CERAMIC CHIP	0.047MF	5%	25V	
C029	1-126-163-11	ELECT	4.7MF	20%	25V	
C032	1-136-177-00	FILM	1MF	5%	50V	
C033	1-164-161-11	CERAMIC CHIP	0.0022MF	5%	50V	
C034	1-126-163-11	ELECT	4.7MF	20%	25V	
C035	1-136-177-00	FILM	1MF	5%	50V	
C036	1-126-301-11	ELECT	1MF	20%	50V	
C037	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C038	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C039	1-126-301-11	ELECT	1MF	20%	50V	
C040	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C041	1-136-171-00	FILM	0.33MF	5%	50V	
C042	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C043	1-136-177-00	FILM	1MF	5%	50V	
C044	1-126-163-11	ELECT	4.7MF	20%	25V	
C045	1-126-301-11	ELECT	1MF	20%	50V	
C046	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C047	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C048	1-126-301-11	ELECT	1MF	20%	50V	
C049	1-136-177-00	FILM	1MF	5%	50V	
C050	1-126-163-11	ELECT	4.7MF	20%	25V	
C051	1-163-809-11	CERAMIC CHIP	0.047MF	5%	25V	
C052	1-124-477-11	ELECT	47MF	20%	25V	
C053	1-136-177-00	FILM	1MF	5%	50V	
C054	1-126-163-11	ELECT	4.7MF	20%	25V	
C055	1-136-177-00	FILM	1MF	5%	50V	
C056	1-124-261-00	ELECT	10MF	20%	50V	
C057	1-136-177-00	FILM	1MF	5%	50V	
C058	1-126-163-11	ELECT	4.7MF	20%	25V	
C059	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C060	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C061	1-124-257-00	ELECT	2.2MF	20%	50V	
C062	1-126-301-11	ELECT	1MF	20%	50V	
C063	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C064	1-126-163-11	ELECT	4.7MF	20%	25V	
C065	1-136-177-00	FILM	1MF	5%	50V	
C066	1-124-261-00	ELECT	10MF	20%	50V	
C072	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C073	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C074	1-126-163-11	ELECT	4.7MF	20%	25V	
C075	1-126-163-11	ELECT	4.7MF	20%	25V	
C080	1-126-301-11	ELECT	1MF	20%	50V	
C081	1-126-163-11	ELECT	4.7MF	20%	25V	
C082	1-126-163-11	ELECT	4.7MF	20%	25V	
C083	1-126-163-11	ELECT	4.7MF	20%	25V	
C084	1-126-163-11	ELECT	4.7MF	20%	25V	
C085	1-126-163-11	ELECT	4.7MF	20%	25V	
C086	1-126-163-11	ELECT	4.7MF	20%	25V	
C087	1-126-157-11	ELECT	10MF	20%	16V	
C088	1-124-239-00	ELECT	6.8MF	20%	25V	
C089	1-126-163-11	ELECT	4.7MF	20%	25V	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

SX

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<IC>	
IC001	8-759-031-31	IC MC33174M	
IC002	8-759-035-30	IC MC4741CM	
IC003	8-759-035-30	IC MC4741CM	
IC004	8-759-031-31	IC MC33174M	
IC005	8-759-031-31	IC MC33174M	
IC006	8-759-035-30	IC MC4741CM	
IC007	8-759-035-30	IC MC4741CM	
IC010	8-759-009-06	IC MC14052BF	
IC011	8-759-008-67	IC MC14066BF	
IC021	8-752-038-21	IC CXA1411Q	
IC022	8-752-038-22	IC CXA1412Q	
		<TRANSISTOR>	
Q902	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		<RESISTOR>	
Q003	1-216-295-00	METAL GLAZE 0 5% 1/10W	
Q004	1-216-295-00	METAL GLAZE 0 5% 1/10W	
Q050	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R001	1-216-086-00	METAL GLAZE 36K 5% 1/10W	
R002	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R003	1-216-086-00	METAL GLAZE 36K 5% 1/10W	
R004	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R005	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R006	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R007	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R008	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R009	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R010	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R011	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R012	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R013	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R014	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R015	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R016	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R017	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R018	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R019	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R020	1-216-748-11	METAL GLAZE 39K 1% 1/10W	
R021	1-216-091-00	METAL GLAZE 56K 1% 1/10W	
R022	1-218-167-11	METAL GLAZE 330K 1% 1/10W	
R023	1-216-339-11	METAL GLAZE 18K 1% 1/10W	
R024	1-216-324-11	METAL GLAZE 10K 1% 1/10W	
R025	1-216-868-11	METAL GLAZE 13K 1% 1/10W	
R026	1-216-091-00	METAL GLAZE 56K 1% 1/10W	
R027	1-216-339-11	METAL GLAZE 18K 1% 1/10W	
R028	1-218-167-11	METAL GLAZE 330K 1% 1/10W	
R029	1-216-324-11	METAL GLAZE 10K 1% 1/10W	
R030	1-216-868-11	METAL GLAZE 13K 1% 1/10W	
R031	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R032	1-216-748-11	METAL GLAZE 39K 1% 1/10W	
R033	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R034	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R035	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R036	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R037	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R038	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R039	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R041	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R042	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R043	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R044	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R045	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R046	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R047	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R048	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R049	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R052	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R053	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R054	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R055	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R056	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R057	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R058	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R059	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R060	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R062	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R064	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R066	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R067	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R068	1-218-148-11	METAL GLAZE 910 1% 1/10W	
R069	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R070	1-216-196-00	METAL GLAZE 820 5% 1/8W	
R071	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R072	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R073	1-218-132-11	METAL GLAZE 4.7K 1% 1/10W	
R074	1-216-602-11	METAL GLAZE 6.8K 1% 1/10W	
R075	1-216-042-00	METAL GLAZE 510 5% 1/10W	
R076	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R078	1-216-596-11	METAL GLAZE 2.7K 1% 1/10W	
R080	1-216-542-11	METAL GLAZE 12K 1% 1/10W	
R083	1-216-226-00	METAL GLAZE 15K 5% 1/8W	
R084	1-216-773-11	METAL GLAZE 68K 1% 1/10W	
R085	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R087	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R088	1-218-132-11	METAL GLAZE 4.7K 1% 1/10W	
R089	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R090	1-216-042-00	METAL GLAZE 510 5% 1/10W	
R091	1-216-602-11	METAL GLAZE 6.8K 1% 1/10W	
R092	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R093	1-216-596-11	METAL GLAZE 2.7K 1% 1/10W	
R096	1-216-542-11	METAL GLAZE 12K 1% 1/10W	
R099	1-216-226-00	METAL GLAZE 15K 5% 1/8W	
R0100	1-216-773-11	METAL GLAZE 68K 1% 1/10W	
R0101	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R0103	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R0104	1-216-324-11	METAL GLAZE 10K 1% 1/10W	
R0105	1-218-167-11	METAL GLAZE 330K 1% 1/10W	
R0106	1-218-158-11	METAL GLAZE 27K 1% 1/10W	
R0107	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R0108	1-216-334-11	METAL GLAZE 22K 1% 1/10W	
R0109	1-218-169-11	METAL GLAZE 43K 1% 1/10W	
R0110	1-216-088-00	METAL GLAZE 43K 5% 1/10W	
R0113	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R0114	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R0115	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R0116	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R0117	1-218-158-11	METAL GLAZE 27K 1% 1/10W	
R0118	1-216-331-11	METAL GLAZE 9.1K 1% 1/10W	
R0119	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R0120	1-216-097-00	METAL GLAZE 100K 1% 1/10W	
R0121	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R0122	1-216-113-00	METAL GLAZE 470K 5% 1/10W	

SX G

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
R0123	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R0124	1-216-748-11	METAL GLAZE	39K	1%	1/10W
R0125	1-216-097-00	METAL GLAZE	100K	1%	1/10W
R0126	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R0127	1-216-331-11	METAL GLAZE	9.1K	1%	1/10W
R0128	1-216-688-11	METAL GLAZE	36K	1%	1/10W
R0129	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0130	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0131	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R0132	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R0134	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R0135	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R0136	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0137	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0138	1-216-094-00	METAL GLAZE	75K	1%	1/10W
R0139	1-216-294-00	METAL GLAZE	10M	5%	1/8W
R0140	1-216-335-11	METAL GLAZE	24K	1%	1/10W
R0141	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R0142	1-216-101-00	METAL GLAZE	150K	1%	1/10W
R0143	1-216-338-11	METAL GLAZE	30K	1%	1/10W
R0144	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R0145	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R0146	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R0147	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R0148	1-216-748-11	METAL GLAZE	39K	1%	1/10W
R0149	1-216-748-11	METAL GLAZE	39K	1%	1/10W
R0150	1-216-338-11	METAL GLAZE	30K	1%	1/10W
R0151	1-216-101-00	METAL GLAZE	150K	1%	1/10W
R0152	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R0153	1-216-335-11	METAL GLAZE	24K	1%	1/10W
R0154	1-216-294-00	METAL GLAZE	10M	5%	1/8W
R0155	1-216-094-00	METAL GLAZE	75K	1%	1/10W
R0156	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0157	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0158	1-216-097-00	METAL GLAZE	100K	5%	1/10W
RC159	1-216-089-00	METAL GLAZE	47K	5%	1/10W
RC160	1-216-049-00	METAL GLAZE	1K	5%	1/10W
RC161	1-216-049-00	METAL GLAZE	1K	5%	1/10W
RC162	1-216-073-00	METAL GLAZE	10K	5%	1/10W
RC163	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R0180	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R0181	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R0182	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R0183	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R0199	1-215-420-00	METAL	910	1%	1/6W

<VARIABLE RESISTOR>

RV001	1-238-015-11	RES, ADJ, CARBON	4.7K
RV002	1-238-015-11	RES, ADJ, CARBON	4.7K
RV003	1-238-015-11	RES, ADJ, CARBON	4.7K
RV004	1-238-015-11	RES, ADJ, CARBON	4.7K

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A1-413-536-13 V BOARD (ZD-106A)
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*4-341-751-01 EYELET (EY601,EY602,EY603,EY612,EY613, EY614,EY615,EY616,EY617,EY618,EY619, EY620,EY621,EY622,EY623,EY624,EY625, EY626,EY627,EY633,EY634,EY635,EY636)

*4-341-752-01 EYELET (EY631,EY632)

9-832-321-21 WIRE KIT (ZD-106A)

REF.NO.	PART NO.	DESCRIPTION			REMARK
<CAPACITOR>					
C601	A1-136-721-61	FILM	1.5MF	10%	400V
C602	A1-137-141-11	FILM	0.082MF	3%	600V
C603	A1-137-141-11	FILM	0.082MF	3%	600V
C604	A1-136-853-11	FILM	0.56MF	5%	200V
C605	A1-136-853-11	FILM	0.56MF	5%	200V
C607	A1-101-824-91	CERAMIC	2200PF		500V
C608	A1-164-143-91	CERAMIC	1000PF	10%	1KV
C609	A1-164-625-91	CERAMIC	680PF	10%	500V
C610	A1-164-143-91	CERAMIC	1000PF	10%	1KV
C611	A1-164-625-91	CERAMIC	680PF	10%	500V
C612	A1-123-929-91	ELECT	1MF	20%	160V
C613	A1-123-929-91	ELECT	1MF	20%	160V
C616	A1-164-143-91	CERAMIC	1000PF	10%	1KV
C617	A1-164-143-91	CERAMIC	1000PF	10%	1KV
C618	A1-162-577-51	CERAMIC	2200PF	20%	400V
C620	A1-164-625-91	CERAMIC	680PF	10%	500V
C627	A1-124-470-91	ELECT	470MF	20%	6.3V
C628	A1-102-038-91	CERAMIC	1000PF		500V
C629	A1-102-038-91	CERAMIC	1000PF		500V
C630	A1-108-810-91	MYLAR	0.033MF	5%	50V
C633	A1-102-038-91	CERAMIC	1000PF		500V
C634	A1-102-038-91	CERAMIC	1000PF		500V
C636	A1-124-553-91	ELECT	220MF	20%	25V
C637	A1-124-468-91	ELECT	100MF	20%	6.3V
C638	A1-108-991-91	MYLAR	0.15MF	10%	100V
C639	A1-124-902-91	ELECT	0.47MF	20%	50V
C640	A1-126-809-11	ELECT (NON POLAR)	100MF	20%	160V
C641	A1-124-557-91	ELECT	1000MF	20%	25V
C642	A1-124-557-91	ELECT	1000MF	20%	25V
C643	A1-124-563-81	ELECT	2200MF	20%	25V
C644	A1-124-563-81	ELECT	2200MF	20%	25V
C645	A1-121-921-91	ELECT, SINGLE	10MF		160V
C646	A1-121-921-91	ELECT, SINGLE	10MF		160V
C647	A1-124-618-51	ELECT	220MF	20%	35V
C648	A1-124-555-91	ELECT	1000MF	20%	16V
C649	A1-124-618-51	ELECT	220MF	20%	35V
C650	A1-124-805-51	ELECT	100MF	20%	160V
C690	A1-130-317-51	FILM	0.068MF	5%	100V

<DIODE>

D601	8-719-500-69	DIODE	S3V10SS
D602	8-719-500-69	DIODE	S3V10SS
D607	8-719-979-60	DIODE	RGP10G
D608	8-719-979-60	DIODE	RGP10G
D609	8-719-979-60	DIODE	RGP10G
D610	8-719-979-60	DIODE	RGP10G
D611	8-719-979-60	DIODE	RGP10G
D612	8-719-979-60	DIODE	RGP10G
D613	8-719-975-76	DIODE	SR340
D615	8-719-979-60	DIODE	RGP10G
D616	8-719-908-03	DIODE	GP08D
D617	8-719-911-19	DIODE	1SS119
D618	8-719-908-03	DIODE	GP08D
D619	8-719-908-03	DIODE	GP08D
D620	8-719-516-57	DIODE	05LC20U
D621	8-719-500-25	DIODE	D5KC20RH
D622	8-719-500-26	DIODE	D5KD20H
D623	8-719-500-67	DIODE	D5KC40H
D624	8-719-109-04	DIODE	RK5
D626	8-719-109-85	DIODE	DD5.1ES-B2
D627	8-719-109-85	DIODE	DD5.1ES-B2

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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
D628	8-719-109-85	DIODE RD5.1ES-B2	
D629	8-719-110-50	DIODE RD18ES-B3	
D630	8-719-109-85	DIODE RD5.1ES-B2	
D631	8-719-911-19	DIODE 1SS119	
D632	8-719-911-19	DIODE 1SS119	
D633	8-719-110-50	DIODE RD18ES-B3	
D634	8-719-911-19	DIODE 1SS119	
D635	8-719-975-26	DIODE SB140	

<COIL>

FB601	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB602	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB603	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB604	A1-410-397-31	FERRITE BEAD INDUCTOR 1.10UH	
FB605	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB606	A1-410-397-31	FERRITE BEAD INDUCTOR 1.10UH	
FB607	A1-410-397-31	FERRITE BEAD INDUCTOR 1.10UH	
FB608	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB610	A1-410-397-31	FERRITE BEAD INDUCTOR 1.10UH	
FB611	A1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
L601	A1-408-598-41	INDUCTOR (EL TYPE) 3.90UH	
L602	A1-408-598-41	INDUCTOR (EL TYPE) 3.90UH	
L603	A9-832-965-11	WIRE KIT (COIL, ARE-CORE)	
L604	A9-832-313-21	WIRE KIT (COIL, ARE-CORE)	
L605	A9-832-965-11	WIRE KIT (COIL, ARE-CORE)	
L606	A9-832-313-21	WIRE KIT (COIL, ARE-CORE)	
L619	A1-459-484-11	COIL (WITH CORE)	
L620	A1-412-415-22	INDUCTOR 47UH	
L621	A1-410-668-41	INDUCTOR 27UH	

<CONNECTOR>

G1	A*1-508-765-11	PIN, CONNECTOR (5MM PITCH) 3P	
G2	A*1-564-512-31	PLUG, CONNECTOR 9P	
G3	A*1-564-506-51	PLUG, CONNECTOR 3P	
G4	A*1-564-509-11	PLUG, CONNECTOR 6P	
G5	A*1-564-507-51	PLUG, CONNECTOR 4P	
G6	A*1-564-506-61	PLUG, CONNECTOR 3P	
G7	A*1-508-786-11	PIN, CONNECTOR (5MM PITCH) 2P	

<IC>

IC601	A8-749-921-89	IC SG115N	

<TRANSISTOR>

Q601	A8-729-926-03	TRANSISTOR 2SC4581N	
	A8-729-926-04	TRANSISTOR 2SC4581P	
Q602	A8-729-926-03	TRANSISTOR 2SC4581N	
	A8-729-926-04	TRANSISTOR 2SC4581P	
Q603	A8-729-318-82	TRANSISTOR 2SB1138-L	
	*4-323-833-00	HEAT SINK, PIN OUT; Q603	
Q604	A8-729-386-12	TRANSISTOR 2SB601-C	
	*4-323-833-00	HEAT SINK, PIN OUT; Q604	
Q605	A8-729-423-35	TRANSISTOR 2SC3311A-R	
Q606	A8-729-209-15	TRANSISTOR 2SD2012	
	*4-323-833-00	HEAT SINK, PIN OUT; Q606	
Q607	A8-729-820-83	TRANSISTOR 2SA1208-T	
Q608	A8-729-423-42	TRANSISTOR 2SA1309A-R	
Q609	A8-729-255-12	TRANSISTOR 2SC2551-D	
Q610	A8-729-423-35	TRANSISTOR 2SC3311A-R	
Q611	A8-729-255-12	TRANSISTOR 2SC2551-D	
Q612	A8-729-423-35	TRANSISTOR 2SC3311A-R	
Q615	A8-729-255-12	TRANSISTOR 2SC2551-D	
Q614	A8-729-168-83	TRANSISTOR 2SC2688-K	
Q615	A8-729-255-12	TRANSISTOR 2SC2551-D	
Q616	A8-729-820-83	TRANSISTOR 2SA1208-T	
Q617	A8-729-820-83	TRANSISTOR 2SA1208-T	
Q618	A8-729-423-42	TRANSISTOR 2SA1309A-R	
Q619	A8-729-201-59	TRANSISTOR 2SA1015-GR	
Q620	A8-729-423-35	TRANSISTOR 2SC3311A-R	
Q621	A8-729-423-42	TRANSISTOR 2SA1309A-R	
Q622	A8-729-423-35	TRANSISTOR 2SC3311A-R	
Q623	A8-729-423-42	TRANSISTOR 2SA1309A-R	

<RESISTOR>

R601	A1-202-846-91	SOLID	470K	10%	1/2W	
R602	A1-202-846-91	SOLID	470K	10%	1/2W	
R603	A1-247-827-81	CARBON	680	5%	1/4W	
R604	A1-247-831-81	CARBON	1K	5%	1/4W	
R605	A1-247-855-81	CARBON	10K	5%	1/4W	
R606	A1-247-631-81	CARBON	1K	5%	1/4W	
R607	A1-216-388-51	METAL OXIDE	0.82	5%	3W	F
R608	A1-216-389-51	METAL OXIDE	1.0	5%	3W	F
R609	A1-216-356-51	METAL OXIDE	3.9	5%	1W	F
	A1-216-358-51	METAL OXIDE	5.6	5%	1W	F
R610	A1-216-356-51	METAL OXIDE	3.9	5%	1W	F
	A1-216-358-51	METAL OXIDE	5.6	5%	1W	F
R611	A1-215-897-51	METAL OXIDE	6.8K	5%	2W	F
R612	A1-244-805-91	CARBON	1.2K	5%	1/2W	
R613	A1-216-341-51	METAL OXIDE	0.22	5%	1W	F
R614	A1-216-444-51	METAL OXIDE	82K	5%	1W	F
R615	A1-247-855-81	CARBON	10K	5%	1/4W	
R616	A1-247-855-81	CARBON	10K	5%	1/4W	
R617	A1-215-737-81	METAL	910	1%	1/4W	
R618	A1-214-913-81	METAL	100K	1%	1/2W	
R619	A1-217-248-11	WIREWOUND	0.82	10%	3W	F
R620	A1-249-405-91	CARBON	100	5%	1/4W	F
R621	A1-249-405-91	CARBON	100	5%	1/4W	F
R622	A1-246-521-85	CARBON	100K	5%	1/4W	
R623	A1-247-855-81	CARBON	10K	5%	1/4W	
R624	A1-249-382-91	CARBON	1.2K	5%	1/4W	F
R625	A1-247-873-81	CARBON	56K	5%	1/4W	
R626	A1-247-839-81	CARBON	2.2K	5%	1/4W	
R627	A1-247-831-81	CARBON	1K	5%	1/4W	
R628	A1-247-804-81	CARBON	75	5%	1/4W	
R629	A1-246-521-85	CARBON	100K	5%	1/4W	
R630	A1-247-855-81	CARBON	10K	5%	1/4W	
R631	A1-247-845-81	CARBON	3.9K	5%	1/4W	
R632	A1-207-455-11	WIREWOUND	0.22	10%	1/2W	
R633	A1-247-811-81	CARBON	150	5%	1/4W	
R634	A1-247-839-81	CARBON	2.2K	5%	1/4W	
R635	A1-247-833-81	CARBON	1.2K	5%	1/4W	
R636	A1-215-936-81	METAL	4.9K	1%	1/6W	
R637	A1-215-436-81	METAL	4.3K	1%	1/6W	
R638	A1-214-779-81	METAL	120K	1%	1/4W	
R639	A1-247-839-81	CARBON	2.2K	5%	1/4W	
R640	A1-247-845-81	CARBON	3.9K	5%	1/4W	
R641	A1-247-833-81	CARBON	1.2K	5%	1/4W	
R642	A1-214-779-81	METAL	120K	1%	1/4W	
R643	A1-215-429-81	METAL	2.2K	1%	1/6W	
R644	A1-214-915-81	METAL	120K	1%	1/2W	
R645	A1-247-873-81	CARBON	56K	5%	1/4W	
R646	A1-247-879-81	CARBON	100K	5%	1/4W	
R647	A1-247-833-81	CARBON	1.2K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

• The components identified by ⋈ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R648	A1-247-833-81	CARBON 1.2K 5% 1/4W	
R649	A1-247-855-81	CARBON 10K 5% 1/4W	
⋈R690	⚠	METAL 1/6W	
⋈R691	⚠	METAL 1/6W	
R692	A1-247-849-81	CARBON 5.6K 5% 1/4W	
R693	A1-247-831-81	CARBON 1K 5% 1/4W	
R694	A1-247-845-81	CARBON 3.9K 5% 1/4W	
R695	A1-247-691-51	CARBON 18 5% 1/4W F	
R696	A1-247-855-81	CARBON 10K 5% 1/4W	
R697	A1-249-382-91	CARBON 1.2 5% 1/4W F	
		<VARIABLE RESISTOR>	
RV601	A1-238-012-41	RES, ADJ, CARBON 1K	
RV602	A1-238-012-41	RES, ADJ, CARBON 1K	
RV603	A1-238-012-41	RES, ADJ, CARBON 1K	
		<TRANSFORMER>	
T601	A1-424-023-12	TRANSFORMER, LINE FILTER	
T602	A1-424-020-11	PRT	
T605	A1-424-390-22	TRANSFORMER, FERRITE POWER	
T606	A1-424-023-12	TRANSFORMER, LINE FILTER	
T607	A1-450-149-11	TRANSFORMER, HEATER	
		**********	
		MISCELLANEOUS	
		**********	
	A1-237-582-21	RESISTOR ASSY, HIGH-VOLTAGE	
	A1-417-177-11	SELECTOR, ANTENNA (AS-I)	
	A1-451-322-11	DEFLECTION YOKE (Y636PA4)	
	A1-452-443-13	NECK ASSY, PICTURE TUBE (NA367)	
	1-544-074-11	SPEAKER	
	*1-555-400-00	CABLE, PIN	
	A1-559-396-12	CORD, POWER	
V903	A8-734-021-05	PICTURE TUBE (SD-208(G))	
V903	A8-734-022-05	PICTURE TUBE (SD-208(8))	
V903	A8-734-023-05	PICTURE TUBE (SD-208(8))	
		**********	
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	PART NO.	DESCRIPTION	REMARK
	1-513-379-00	CONVERTER (EAC-25)	
	3-752-931-21	MANUAL, INSTRUCTION (ENGLISH)	
	*4-030-895-01	JOINT	
	*4-031-405-01	TRAY	
	*4-031-406-01	INDIVIDUAL CARTON	
	*4-399-402-01	CUSHION (UPPER) (ASSY)	
	*4-399-403-01	CUSHION (LOWER) (ASSY)	
	*4-399-404-01	PLATE	
	*4-399-405-01	PLATE, TOP	
		REMOTE COMMANDER	
	1-465-780-11	REMOTE COMMANDER (RM-Y109)	
	3-707-584-01	COVER, BATTERY (FOR RM-Y109)	